THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY

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THE AMERICAN NEPTUNE

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THREE *hundred and fifty years ago Henry Hudson sailed in Captain George Weymouth's old ship* Discovery *on his last voyage searching for the Northwest Passage. The year before under the Dutch flag he had sailed up the Hudson River to the head of navigation. In* 1607 *he had made an attempt to prove a widely held theory of the time that Cathay could be reached by sailing directly across the North Pole. On this voyage he reached about* 81°, *farther north than any other man had sailed up to that time, and discovered Jan Mayen Island. His reports of vast numbers of whales and walruses in the vicinity of Spitzbergen stimulated the English and Dutch north whale fishery, which was the most important result of that expedition. The following year* 1608, *Hudson sailed again for the Muscovy Company in an unsuccessful attempt to reach China by the northeast.*

In 1610 *he dropped down the Thames, passed around the north of Britain and, after stopping briefly at Iceland, pushed westward and entered Hudson Strait. The month of July was spent slowly exploring Ungava Bay and the southern shores of the Strait always working westward. His crew was troublesome; currents, ice, and storms hampered his navigation but, on* 1 *August he came to the western gateway of the Strait where two towering headlands, Cape Wolstenholm and Cape*

Digges, guarded the entrance to the great inland sea. Between them he sailed into the broad blue bay that now bears his name, thinking that at last he had found the Northwest Passage and that he could push on to the warmer, gayer Pacific.

Keeping the eastern shore of the bay in sight he worked southward until he found himself in the shallow cul-de-sac of James Bay. The year was far advanced; the ice closed in behind him and there he lay with no way to return and nearing the end of his six months' provisions. Ever since Iceland, Hudson had been troubled with surly and mutinous officers and crew. The difficulty now became worse and the ensuing winter was an extended nightmare. By 12 June 1611 the ship was free again and Hudson intended to continue his explorations, but the crew wished to return to England and wanted no part of the possibility of a second winter in Hudson Bay. On 21 June the situation reached its climax. Hudson, with his son John and seven other men, was put into a shallop and left to perish while the mutineers set sail for England. About half the mutineers lost their lives on the return voyage and not one of them was ever brought to trial or convicted for one of the most shocking crimes of the sea ever committed. Several sailed again to Hudson Bay with Captain Thomas Button the following year, ostensibly to search for Hudson but no sign of the intrepid navigator was ever found.

Another and very different anniversary, the centenary of the voyage of Kanrin Maru *is commemorated in this issue of* NEPTUNE *in the article by George M. Brooke, Jr. This voyage is a dramatic episode in early Japanese-American relations—relations that have seen the two countries as allies and as enemies within the past half century.*

ERNEST S. DODGE

Peabody Museum of Salem

The Revenue Steamer E. A. Stevens *in the Civil War*

BY R. A. REDMOND

ROBERT and Edwin Stevens, prominent engineers from Hoboken, New Jersey, conducted a number of experiments with ordnance and armor during the early nineteenth century. As a result, they designed an armored vessel. This ship, known as the 'Stevens Battery' incorporated such features as airtight compartments, partial submersion, propulsion by a submerged propeller. Heavy guns were to be mounted atop an inclined casemate. The gunners would be able to load, aim and fire without exposing themselves.

Robert Stevens died in 1856 but Edwin Stevens carried on.

Edwin bought the iron-hulled coastal steamer *Naugatuck*, refitting her to demonstrate the advantages of the Stevens theories, and presented her to the Treasury Department.

Acquisition of ordnance for *Naugatuck* was somewhat difficult. Mr. Stevens requested the assistance of Secretary Chase in obtaining a rifled gun for the vessel's main battery in July 1861. The Secretary of the Treasury referred the matter to the Chief of Ordnance. A one-hundred-pounder Parrott rifle was promised.

Months passed but still no gun arrived. Secretary Chase then wrote directly to Captain Parrott in an effort to hasten delivery. However, all effort was to no avail. In March of 1862, Secretary of War Stanton was first requested to provide a fifteen-inch Rodman gun from Fortress Monroe and subsequently a twelve-inch gun, then in Boston. Finally, the Parrott rifle arrived and was mounted on *Naugatuck*.

Guns of the type received weighed 9,700 pounds. They had a bore 130 inches long and 6.4 inches in diameter.

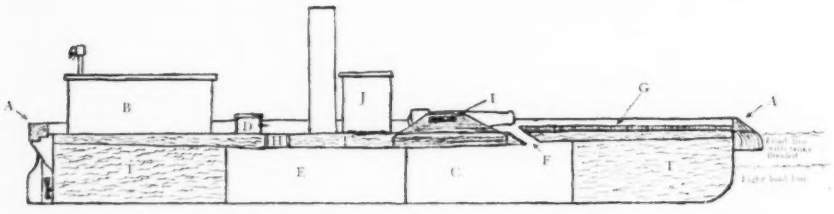
In addition to the main battery armament, *Naugatuck* was provided with two James twelve-pounder howitzers and small arms.

After receipt of the Parrott rifle, the twelve-inch gun was made available for Edwin Stevens' vessel. Perhaps because the 'Stevens Battery' was

to be armed with large-bore guns, it was decided that the twelve-inch gun was preferred. Accordingly, arrangements were made to have the twelve-inch gun shipped to Fortress Monroe for mounting on *Naugatuck* there.

Mr. W. W. Shippen, an agent for Mr. Stevens' Hoboken Land Development Company, was given a letter of temporary commission as Captain in the Revenue Marine. Captain Shippen then assumed command of *Naugatuck*. Second Lieutenant J. Wall Wilson of the Revenue Marine was assigned as first officer.

Finally, Mr. Stevens' experimental vessel was ready for action. She entered the service with a new name. She was now the U. S. Revenue Steam-



U. S. Revenue Steamer *E. A. Stevens*

A—Wooden Armor
B—Officers Quarters
C—Crews Quarters
D—Ready Ammo Locker for 12 pdrs.
E—Engine Space
F—Gun Loading Port
G—Low Angle Firing Groove
H—Hatchway
I—Recoil & Counter-Recoil Spring Ass'mbly
J—Wheelhouse
T—Flooding Tanks

er *E. A. Stevens,* and she was changed considerably. The hull was divided into four major compartments of more or less equal size. The compartments at bow and stern were used as flooding tanks, enabling this ship to partially submerge. An upper deck was constructed two feet above the main deck. The space between these two decks formed a third tank which could be filled and emptied simultaneously with the tanks in the hull. With those tanks flooded, the vessel's normal draft of about five feet was increased to eight and a half or nine feet.

The compartment directly abaft the forward tank contained the crew's quarters, galley, a donkey engine, magazine and loading room.

The remaining compartment was the domain of the engineer, Thomas Ligle. It contained two engines. These engines were both supplied with steam from a single boiler. Since each engine drove a separate shaft, the ship could be turned quite rapidly by properly manipulating her propelling machinery. The propellers no doubt were the same simple screw designed by John Stevens in 1804.

She measured one hundred and one feet between perpendiculars. Her former twenty-foot beam was increased by a slanting bulwark of white cedar. This bulwark was twenty inches thick and four and a half feet deep, extending a foot and a half above deck. The slanting face of this 'armor' was to illustrate the increased resistance of a slanting plane to penetration by shot and shell. In addition, this thick belt of wood provided reserve buoyancy in the event of a serious hit while immersed in fighting trim. Thusly were the 'Stevens Battery' air compartments represented on the trial vessel. Her depth of hold was seven feet, or, if measured from the top of the 'tween-decks tank, nine feet.

On deck, a pilothouse was located amidships. A cabin sixteen feet long on the quarterdeck contained four bunks, lockers and a heating stove. This was the officers' quarters. One twelve-pounder was located on each side of the quarterdeck. A small 'dog house' between the howitzers, presumably was utilized as a ready service ammunition locker for these broadside guns.

The principle item of interest—and of subsequent controversy—was the main battery. The Parrott rifle was mounted forward of the pilothouse in a stationary carriage on the centerline. Springs, made of rubber discs one inch thick, were placed fore and aft of the trunnions. These springs composed a recoil and counter recoil system, returning the gun to battery without causing the crew to expose themselves on deck to handle tackle. A 'U'-shaped groove was built into the upper deck in line with the gun's bore. A gate, where the groove met the bulwark at the bow, could be opened for low-angle, short-range firing. At the after end of this groove was the loading port. To load the gun, the barrel was depressed until the muzzle was opposite this port. The powder and projectile were placed in line with the bore and rammed from below. The gun was then elevated and fired.

It is not known whether Edwin Stevens used an adaptation of the steam-powered loading system proposed for the 'Stevens Battery' or if a manual system was devised. The donkey engine located at the forward end of the loading room may have been utilized to provide power ramming. However, there is no record confirming this.

Thusly prepared for combat, the one-time peaceful coastwise vessel got under way for Fortress Monroe to prove her new principles of naval construction. Two other new types awaited her arrival—U.S.S. *Monitor* and C.S.S. *Virginia*, ex U.S.S. *Merrimack*.

Secretary of the Treasury Chase wrote Commodore Goldsborough, flag officer of the naval forces at Fortress Monroe, advising him that the

Treasury Department was placing *E. A. Stevens,* 'a boat of peculiar construction,' at his disposal. This letter also advised the Commodore that a twelve-inch gun had been ordered and would soon be substituted for the gun then mounted.

The strange new vessel from the Revenue Marine joined the fleet in Hampton Roads on 9 April.

One day later, General McClellan wired the Commodore requesting the use of *Naugatuck* in his siege of Yorktown. (Most, if not all, Army and Navy dispatches referred to *E. A. Stevens* as *Naugatuck* while she was in Virginia waters.) General McClellan had wired the Assistant Secretary of the Navy in March asking how long Mr. Stevens would require to finish his vessel. The General's early interest in the new ship doubtlessly stemmed from the same circumstances that caused him to state that the possibility that *Virginia* might reappear paralyzed the movements of his Army.

Meanwhile, Captain Shippen probably spent his first complete day in Hampton Roads familiarizing himself with the local waters and military situation, current fleet signals and learning the 'Navy way.' He evidently learned quickly enough in the short time allotted, for the next day found his command in action.

Hampton Roads presented a serene picture on the morning of 11 April 1862. The surface of the water was calm. The early morning sun bright. A slight surface haze partly obscured objects ashore.

Aboard the flagship *Minnesota* a man on watch peered intently into the haze. Suddenly, he shouted. *Virginia* was coming out! *Minnesota* fired a signal gun to warn the other vessels in the harbor. Small transports and supply ships in Hampton Roads immediately hoisted sail in an effort to get under way in the light air. Steam tugs bustled about the anchorages collecting strings of the heavier vessels, towing them toward the rip raps. (The rip raps are now familiar to Norfolk-based ships as Fort Wool.) Several vessels anchored near the mouth of Hampton Creek elected to maintain their position. The close proximity of the shore batteries gave them a feeling of security.

Two French warships, *Catinat* and *Gassendi,* and H.M.S. *Rinaldo* remained at anchor but raised steam.

Virginia was followed by *Yorktown, Jamestown, Raleigh* and three other vessels. Two of these other Southern vessels were probably *Teaser* and *Beaufort.*

Virginia moved ahead of her consorts and approached H.M.S. *Rinaldo.* Evidently she warned the Britisher that the lower roads was to become a

hazardous area, for after the Confederate ironclad returned to her fleet, the English and French vessels weighed anchor and moved toward Newport News.

Monitor maintained a position close aboard her usual anchorage, near the batteries. *E. A. Stevens* came alongside her. These two vessels formed the vanguard of the United States fleet. Thousands of eyes watched, eager to see a decisive, final battle between *Monitor* and *Virginia*. Those ashore must have wondered what the unusual looking little steamer alongside *Monitor* was.

The spectators were compelled to be patient. Hours passed with the Confederate vessels moving about with no apparent strategy. The Federal fleet was content to maintain position behind *Monitor* and *E. A. Stevens* and close to the shore batteries. Viewers who had longed for another contest between the two famous ironclads were destined to be as disappointed as those who wished a general melee between the two fleets. Neither Jeffers of *Monitor* nor Tatnall of *Virginia* were to risk their command recklessly. They realized that they were the champions and protectors of their respective fleets. Indeed, Tatnall was, in effect, protector of Norfolk and tidewater Virginia.

Suddenly, *Jamestown* and *Raleigh* steamed rapidly toward Hampton. It soon became evident that their object was the capture of three vessels that either could not get under way earlier or felt secure because of the shore batteries nearby. These ships were the brig *Marcus* and the schooners *Saboah* and *Catherine T. Dix*.

Meanwhile, much to the surprise of onlookers ashore and on the foreign warships, the United States ships maintained their positions, permitting the three vessels to fall easy prey to the secessionists. In order to further humiliate and provoke Commodore Goldsborough's fleet, *Jamestown* and *Raleigh* towed their prizes close aboard the stern of H.M.S. *Rinaldo* with the stars and stripes hoisted upside down beneath the Confederate flag. Even this act, cheered heartily by the British crewmen, did not induce the Union fleet to attack *Virginia* and her consorts in waters of Tatnall's choosing. Northern officers and men alike gritted their teeth and kept their peace, or cursed aloud, according to their nature, in frustration at the orders that kept them from rushing forward to engage their vaunted enemy.

Although the fleet could not advance to battle, at least they could 'close the barn door.' *E. A. Stevens* and the gunboat *Octorora* were ordered to proceed to the mouth of Hampton Creek to protect the ships anchored there from the fate that befell their three hapless comrades.

Noting this maneuver, Josiah Tatnall moved his ponderous, unwieldy, but respected ironclad toward these two small warships at Hampton Creek. He opened fire on *E. A. Stevens* at long range. His projectiles fell some distance from the target. This is quite understandable since *Virginia* gunners had never held any target practice except the short-range firing that caused such execution aboard *Cumberland* and *Congress* and fought the faster, more maneuverable, lighter draft *Monitor* to a draw.

E. A. Stevens and *Octorora* maintained their station and returned the fire with spirit and a goodly amount of malice aforethought. Unfortunately, their fire also was without accuracy, although the range of *E. A. Stevens'* gun caused subsequent comment by one of *Virginia*'s officers.

Virginia broke off the engagement and the Confederate fleet showed their sterns to the United States vessels and returned in triumph to Craney Island.

The following day, General McClellan repeated his request for the use of *E. A. Stevens* but to no avail. She was to stay on hand as long as *Virginia* was active.

Weeks passed with no additional naval battles and no effort on the part of the Army to capture Sewell's Point and Norfolk. This stalemate caused concern in Washington. Consequently the Revenue Steamer *Miami* left the navy yard in Washington under cover of darkness and rain on a secret voyage. *Miami* had a distinguished group of passengers—to wit: General Viele, Secretary of War Stanton, Secretary of the Treasury Chase and—the President of the United States. These gentlemen boarded *Minnesota* and a council of war was held with Commodore Goldsborough and General John E. Wool. The President, in all probability, was advised that the delay was caused by the existence of *Virginia* and the Confederate fortifications at Sewell's Point. Further, the Army claimed shoal water blocked the approach to the most favorable invasion route.

The President was a man of determination, to say the least. He meant to learn the facts. So thoroughly did he investigate, that he approached the shore through the 'shoal' waters. After hearing from General Viele, who had made a reconnaisance, that the alleged mass of troops on the beach did not exist, he went to see for himself. Accordingly, *Miami* landed all her distinguished passengers. What course would history have taken if the Confederates could have spared one sharpshooter to guard the beach and if he could have avoided the sharp eyes of the men of the Revenue Marine who watched over their President?

The President did more than wander about the Hampton Roads area. He started people heaving around. First—the President on 7 May sug-

gested to Commodore Goldsborough that a flotilla be sent up the James River with *Galena,* a new experimental ironclad. The Secretary of the Treasury, upon being advised of this plan by the President, requested the Commodore to send *E. A. Stevens* with the James River attack force.

E. A. Stevens also was involved in the other plans for settling the Norfolk problem. Sewell's Point was to be attacked by a bombarding force, including the Revenue steamer. If *Virginia* should appear to render assistance to the fortifications, and it was presumed she would, the vessels were to break off action and retreat. If this maneuver should lure the Confederate ironclad into the proper position, she was to be attacked by all available vessels in any manner they could hit her. Shooting, ramming or boarding. That was the word. The shore bombardment group was to be commanded by Captain Lardner of *Susquehanna. E. A. Stevens, Monitor, Dacotah* and *San Jacinto* completed the force. *E. A. Stevens* now commanded by First Lieutenant D. C. Constable of the Revenue Marine, weighed anchor at 10:10 hours. *E. A. Stevens* and *Monitor* led the attack. The ships' gunners soon found the range and their projectiles were seen falling on or within the works with regularity. *E. A. Stevens,* firing at ranges varying from three quarters of a mile to a mile and a quarter, was creating her share of havoc. Her gunners found, however, that when loading the gun from below, the projectiles started from the cartridges in the inclined bore. Four of *E. A. Stevens'* shells burst prematurely, but this was not uncommon with shells of the period.

The fort's return fire slackened and finally ceased. But *Virginia* to the rescue! Tatnall was steaming up as fast as his dilapidated machinery would drive him. It appeared as if the Federal fleet would fight this time for he observed *Minnesota* and *Vanderbilt* get under way. But—no, the attacking force was falling back.

A brave fighter but no fool, Tatnall did not pursue the bombardment force. He cruised about near Sewell's Point for a while. When he realized no one was going to attack him at his position, he ordered a gun to be fired to windward (a naval insult at that time) and returned to his buoy.

Three days later, *E. A. Stevens* and *Monitor* were among the first United States vessels to enter the Elizabeth River since the Confederate capture of the Gosport navy yard. Norfolk was captured—*Virginia* was scuttled.

The following day, *E. A. Stevens* and *Monitor,* together as had become customary, proceeded up the James River. A Confederate battery at Hardens, or Mother Tynes, Bluff fired at them but without result.

At James Island, they joined *Galena, Aroostook* and *Port Royal,* under John Rodgers, Commodore. *E. A. Stevens* and *Port Royal* pulled the

grounded *Aroostook* free and the force got under way that evening. Objective—Richmond!

Galena led the flotilla until they reached Harrison's bar. There Lieutenant Constable was ordered to take the lead. The Revenue steamer took advantage of her submersible feature. Steaming at maximum draft, she could detect snags or other obstructions. After grounding, she would warn the other ships, and refloat herself by pumping out her tanks. To further reduce the hazards of the James River, the squadron put small boats out to sound the channel.

At noon on 13 May, the force anchored at City Point. A boat with a white flag approached *Galena*. Commodore Rodgers was requested by the boat's occupants not to shell the town as there were no Confederate troops there. A search of the town and of three schooners moored there confirmed this and the United States ships continued their slow winding voyage.

The force was nearing Richmond as the ships anchored on the night of 14 May. Commodore Rodgers, anticipating desperate measures on the part of the Confederates, posted *E. A. Stevens* above the anchorage. The Revenue cutter rigged grappling hooks and tow chains. Her task to intercept and tow ashore any fire rafts that may be sent downstream.

On the morning of 15 May, the flotilla encountered a Confederate defense, known as Fort Darling. The river was obstructed and heavy guns were mounted on the bluffs. Sharpshooters were dug in along the riverbanks. Among the defenders—vengeful gunners from *Virginia* and other Confederate ships.

Galena advanced, swung across the stream to a spring line and anchor and opened fire. The battle was fierce, the Confederates concentrating their fire on *Galena*. *Monitor* moved forward of the flagships at 09:00 in order to draw off some of the fire. Her guns could not elevate sufficiently to bear on the enemy, however, so she dropped back to her former position.

Galena was not alone in her difficulties. *Port Royal* was struck twice below the water line and her captain shot in the leg by a Minié ball.

The gunners on *Aroostook* found that the sabots (rotating bands) on many of their shells for the eleven-inch gun were too large for the bore.

E. A. Stevens, anchored near the east bank, had her share of misfortune also. Early in the engagement, her 100-pound Parrott exploded, injuring one seaman. She continued in action firing shell and cannister from her twelve-pounder howitzers. Shot and shell passed over her as she lay semi-submerged. Sharpshooters continued firing at her and a musket ball struck her quartermaster, James Wilson, in the arm.

Finally, at 11:05, the flagship, nearly out of ammunition, made signal to break off the action and the Federal fleet retired under continuing sniper fire.

The dead and wounded were transferred to *E. A. Stevens* and *Port Royal* to be taken to Norfolk. Two days after the battle, *Port Royal* still was carrying seventeen of *Galena*'s fatalities en route to Fortress Monroe. The captain felt it would be best for the welfare of his crew to dispose of the bodies. Accordingly, when the two ships reached James Island, *E. A. Stevens* came alongside to take the bodies ashore for burial.

E. A. Stevens, after reaching Hampton Roads and disembarking the wounded she transported, was ordered back to the James River flotilla to act as a tug, dispatch and reconnaisance vessel. She had not returned long to that command when she was again utilized as an ambulance.

Arriving at Norfolk again, Lieutenant Constable received instructions to take his command to the Washington navy yard. Four days later, he was promoted to Captain for his gallantry in action. Second Lieutenant J. Wall Wilson was promoted the same date to First Lieutenant.

On 16 June, *E. A. Stevens*, now under the command of Lieutenant Wilson, was ordered to cruise the Potomac or Chesapeake Bay. The Secretary of the Treasury was determined to prevent the seaborne smuggling trade that continued between the Northern and the Southern States. Although the experimental Revenue steamer's main battery was inactive, she was still able to make good speed and her twelve-pounder howitzers would serve well enough against smugglers.

Meanwhile, discord arose regarding the proper method of repairing her. Mr. Stevens, upon learning of the damage to the ship, immediately wrote the Assistant Secretary of the Treasury to learn whether the Treasury Department or the Navy would order her repairs, offering to attend to the repairs himself.

Subsequently, Mr. Stevens learned that it had been proposed that the vessel's upper deck be removed and that her main battery be a thirty-pound gun.

Mr. Stevens protested such a move, stating that either change would prevent testing of the principles of construction that she represented, citing the features she had shown to good advantage. Her ability to submerge made her a small target, enabling her to escape the cannonade at Fort Darling without being struck except by small-arms projectiles. He further pointed out the usefulness of her submerging quality in her rôle as advance scout for the James River flotilla's initial push upriver from Jamestown Island. (Lieutenant Wilson also gave credit to this feature in his report of the action.) Mr. Stevens also pointed out that his system of load-

ing and firing the gun without exposing the crew had prevented heavy loss of life when the gun exploded. He further stated that the twin propellers also had proven their worth in enabling the Revenue steamer to turn quickly in narrow channels and in aiding grounded vessels.

He went on to say that in view of the reconstruction of the world's navies, caused by *Virginia* and *Monitor,* he felt it necessary that his vessel's design be thoroughly tested. Carrying his arguments further, he journeyed to Washington and on 26 June 1862 wrote Assistant Secretary of the Treasury Harrington maintaining the advantage of his design for a gun mount. Referring to Lieutenant Constable's report of the action at Sewell's Point, he maintained that if the gun (main battery) were loaded in conformance with his instructions he would guarantee the shells would not start from the cartridges.

Mr. Stevens wisely said that it would be less expensive to use a Dahlgren on the burst Parrott gun's mount than to install a pivot gun, as neither the carriage nor the deck frame were damaged by the explosion. Mr. Harrington then contacted the commanding officer of *E. A. Stevens* to learn his views.

When consulted, Lieutenant Wilson did not state any preference for either a pivot gun or for a gun mounted in accordance with the theories advanced by the vessel's donor. However, he did state that if such a gun should be mounted again, considerable repairs should be made. The repairs in general consisted of removing the timber from the sides, thoroughly overhauling the hull and raising the iron sides to provide a good foundation for the timber armor belt. The upper deck should be repaired and calked and the main deck made of boiler iron to prevent leakage as a result of concussion from firing the main battery.

In the event that a pivot gun should be mounted, Lieutenant Wilson suggested repairing the main deck and making the upper deck flush if the submerging feature would be retained. If the vessel were not to keep her ability to submerge, he suggested that the upper deck be completely removed. Less than two weeks later, *E. A. Stevens* was in Hoboken for repair—and for a pivot gun.

John Wilson, the quartermaster who had been wounded by musket fire at Fort Darling, died at the naval hospital in Washington.

Lieutenant Wilson was ordered to ascertain the person or persons entitled to receive the personal effects and cash left by the deceased. This mission was more easily ordered than accomplished as the quartermaster had enlisted under an assumed name. However, men of the Revenue Marine had experience in uncovering concealed facts and the man's true

name was discovered to be John McDonald. His relatives resided in Brooklyn and eventually came into possession of the man's effects.

E. A. Stevens received two rifled six-pounders on her quarterdeck and a forty-two-pounder pivot gun was mounted forward.

Ready for sea again, she hauled into the stream and at 12:00 hours 13 November 1862, she went back into commission.

She was on station off Fort Schuyler when the New York draft riots broke out. Lieutenant Wilson received word on board that the United States enrolling officer of the town of Westchester had been driven from his home by a mob and had taken refuge in McDougall General Hospital at Fort Schuyler. A large body of rioters planned to attack the hospital to capture him.

E. A. Stevens steamed inshore, anchoring off Baylis Dock in a position that would enable her to rake the approach to the hospital with her pivot. Lieutenant Wilson sent signal lights and small-arms ammunition for the hospital and small-arms ammunition for Fort Schuyler.

The evening and night remained peaceful enough and the ship went back on station. Two weeks later, on 29 July 1863, Lieutenant Wilson logged, 'The present name of this vessel was changed and the former name *Naugatuck* re-adopted.' 5 August found *Naugatuck*'s crew undergoing some of the exercises that kept them well tuned. The pivot gun crew had started their practice with a blank round followed by a shot round. Reloaded with twelve pounds of powder and a one hundred and twenty pound shot, the gun was fired the third time. With a flash and a roar, the gun burst. The breech was blown directly aft through the wheelhouse and cabin, falling into the water some distance astern. Lying in the smoke and escaping steam, seven men were injured.

The fore and after sections of the wheelhouse and cabin were demolished by the accident, as were the funnel and steampipe. The officers' gear stowed in lockers in the cabin were smashed.

Naugatuck still was watertight and with the wreck cleared away and the steampipe repaired, she returned to her guard station. There, shorthanded, with her upper works a shambles, her crew illustrated the determination and perseverance that characterized the men of the Revenue Marine. During the following four days, they spoke and boarded two hundred and fifty-two vessels. In addition, they rendered assistance to the transport *Detroit* who had an insufficient guard for her cargo of restless draftees.

Comparison of the one casualty inflicted by the bursting of the Parrott gun on the James, with the seven casualties caused by the exploding pivot

gun, indicated that the vessel's donor knew what he was talking about. Coincidentally the little steamer was again named *E. A. Stevens*. Finally, in October, she was relieved of guard duty and was hoisted on a marine railway at City Island, for her bottom had become foul.

Returning to duty, she rendered assistance to the schooner *Charles Vickery*, preventing her from grounding on the beach. *E. A. Stevens* started the new year 1864 by receiving a new Parrott gun. But it was only a thirty-pounder and it was mounted as a pivot. Mr. Stevens' theories were not to be given a second chance after all.

Although not employed in battle, she was proving her worth to the Treasury Department as a strict and active enforcer. Vessels were stopped and sent to the customs house for any error in their papers. Only the excursion steamer *Port Royal*, who once left her papers at the customs house, was allowed to pass.

In November 1864, *E. A. Stevens* blew a hole in her boiler. Unable to proceed under her own power, she took a tug and was towed to her station. There she lent an armed boat to the ship *Pennsylvania* to help quell a mutiny.

January and February of 1865 were icy months and there were many days when no vessels passed. When they did, they found *E. A. Stevens* on watch. In March, Lieutenant Wilson was promoted to a captaincy in the United States Revenue Marine.

April brought news of Appomatox Court House and the absolute end to Mr. Stevens' opportunities to prove his theories in battle. However, the Revenue Marine still had need of good steamers and the ex *Naugatuck* certainly was that. She was ordered to New Bern, North Carolina, which was her home port until the end of her career. In January of 1890, she was lent to the Marine Hospital Service as a floating hospital. In April of that year, she was sold to a Mr. Henry Brown in Baltimore for $3,025, to be scrapped.

So, little *Naugatuck* after forty-six years afloat, suffered the ignoble fate that claimed so many other fine ships. She was a good ship, but she didn't prove her point.

Robert A. Redmond was born in Kansas City, Missouri. He entered the U. S. Navy as an apprentice seaman in 1947 *and served aboard U.S.S.* Mississippi. *In* 1950 *he joined the Coast Guard as a fire controlman and was billeted aboard the cutters* Rockaway, Mackinac *and* Spencer, *and also served as an instructor on the Coast Guard rifle and pistol range at Cape May, N. J. He is currently a Post Office employee in Jersey City, and maintains a part-time contact with the sea as a Coast Guard reservist aboard the Navy Selected Reserve Vessel U.S.S.* Thaddeus Parker (*DE*369).

PLATE 5

Drawing of the invulnerable steam battery.

Clinton Roosevelt's 'Invulnerable Steam Battery,' 1835

BY MARSHALL SMELSER

IN the early nineteenth century, when the industrial revolution went to sea, ingenious men of all maritime nations proposed to adapt steam power and the new metallurgy to naval purposes. Americans, with their characteristic inventiveness, dreamed and schemed with the others. Some proposals were prophetic and fantastic, such as John Stevens's iron-plated floating saucer (suggested during the War of 1812) to be moored at one anchor, the rode to be secured to a shackle with a swivel so that the battery could be rotated by steam-driven screw propellers to bring each gun to bear in turn.[1] In the next generation another extravagant fancy was urged by Major General Edmund Pendleton Gaines—the construction of armored scows up to 300 feet in over-all length, and up to 150 feet in beam, mounting as many as two hundred guns, to be towed into action as harbor defenses in wartime and in time of peace to be fitted with submarine plowshares for clearing channels.[2] Uriah Brown's armored marine flame thrower, projected in 1814, attracted enough favorable attention to get construction started (but not finished) and to be briefly reconsidered in the Congress in 1835.[3] Stevens's primeval, free-floating gun turret, Gaines's combination marine fortress and mudplow, Brown's guided fireship, and many other projects well illustrate the variety of visions that were stimulated by the arrival of the Iron Age.

Some of the projects were quite feasible, among them Robert Fulton's fast *Demologos*, the first steam vessel of the United States Navy, which was in commission from 1815 to 1829, and was acceptably 'armored' against solid shot by almost five feet of planking.[4] Commodore James Barron recommended an armored ram in the 1830's and a bill to appropriate for

[1] James Phinney Baxter, 3d, *The Introduction of the Ironclad Warship* (Cambridge, Mass., 1933), pp. 8-9.

[2] Ibid., p. 31.

[3] Ibid., pp. 9-10.

[4] Bernard Brodie, *Sea Power in the Machine Age*, 2d ed. (Princeton, 1943), pp. 18-21.

the purpose was favorably reported by the Committee on Naval Affairs of the House of Representatives, but failed to pass.[5]

These projects, whether stillborn or applied, had one thing in common —they were purely defensive. The necessity for armor was made plain by the perfection of horizontal naval shellfire but Henri-Joseph Paixhans, the man who demonstrated this use of shellfire, at first thought no seagoing vessel could carry enough armor to protect itself and still stay afloat.[6] Later he suggested that razees and large steam frigates could be suitably armored and still go off soundings[7] but apparently his first notion—that armor was only for harbors—was the one most readily accepted.

In the 1820's and 1830's armored or, at least, iron-plated steam batteries seemed to be the ultimate defensive naval weapon. They were discussed in the Congress in 1826. Five years later Secretary of the Navy Levi Woodbury recommended that two of them be built, but the Congress did not act. His successor, Mahlon Dickerson, had the same notion. The theory was that armored steam batteries were invincible in the territorial waters of the United States because no potential enemy could bring ironclads to America across the ocean.[8] It seems quite likely that several such vessels would have been launched except that President Andrew Jackson was not much interested in naval matters in his first term, a disinterest demonstrated by his recommendation, in 1829, that all naval construction be stopped because geography made the conquest of the United States impossible. However, in 1835, Franco-American relations were strained and a rumor said France was sending a fleet to America for 'observation.' At the moment the United States had one of its rare treasury surpluses and a few of the leading Jacksonians thought the money might well be spent on naval construction. The President suggested building some marine batteries but supporters of the 'Distribution' scheme won out and the surplus was 'loaned' to the states.[9]

The national debt had been extinguished in January 1835. Promptly, a stream of suggestions for strengthening the Navy flowed in to Washington from inventors and designers.[10] Among them was a proposal for an 'Invulnerable Steam Battery' from one Clinton Roosevelt of New York.[11]

[5] Baxter, op. cit., p. 30.

[6] Ibid., p. 24.

[7] Ibid., p. 26.

[8] Harold and Margaret Sprout, *The Rise of American Naval Power, 1776-1918* (Princeton, 1946), pp. 112-114.

[9] Ibid., pp. 105-106; 'Memorial of Clinton Roosevelt,' 29 January 1835, Record Group 233, National Archives.

[10] Baxter, op. cit., p. 31.

[11] 'Memorial of Clinton Roosevelt,' 29 January 1835, Record Group 233, National Archives. My thanks to Dr. Buford Rowland for the discovery of this text.

It is pretty difficult to avoid the Roosevelts when studying our maritime past[12] but Clinton Roosevelt was one of the less well known of the aquatic clan, being neither ancestor nor uncle of a president.[13] His project received only a few kind words from the Congress but no other steam battery had any more success with that body than his did. This class of stillborn projects deserves some attention, if we are to know our naval history thoroughly, and Roosevelt's dream ship was so very typical of the day that it serves very well to illustrate that chapter in the story of naval thought.

He sent his proposal to his representative in Congress, Aaron Ward, accompanied by a drawing, an explanation and several scientific endorsements. Since the President and the Secretary of the Navy had recommended the construction of steam batteries Roosevelt said he had 'discovered a mode' of using such armament. He proposed to arm a vessel with a spar torpedo at the bow. The ship would be plated with 'polished bands of iron' so that shot would ricochet from the hull. His hull form was based on the longboat of the day, except that it would be split lengthwise and two paddle wheels would be placed over the centerline. The inner sides would be flat and specially braced. Iron plate could be provided for the paddle housings. The ship would carry 'arms of the ordinary kinds . . . as well as blazing combustibles projecting over the prow'—fireballs thrown by mortars. (The drawing shows four sixty-eight pounders, and ten mortars.) The deck was to be roofed and iron plated against 'grenades or other instruments of war. . . .' Such ships, he said, need not be large (he did not state the dimensions) and the most powerful would be 'the least expensive of all ships of war.' He asked the Congress for a hundred thousand dollars to build one under 'his immediate superintendance.'[14]

He enclosed endorsements of the experiment by Professors Charles W. Hackly of Columbia and James Renwick of the College of the City of New York.[15]

In the tactical explanation which accompanied his memorial, Roosevelt cited the French Academy as approving of such underwater lines as his for ships designed to make headway or sternway with equal facility. He proposed to shoot fireballs at the enemy's sails and rigging. After a salvo of fireballs and of sixty-eight-pound shot aimed below the enemy's

[12] Karl Schriftgiesser, *The Amazing Roosevelt Family, 1613-1942* (New York, 1942); William T. Cobb, *The Strenuous Life; The 'Oyster Bay' Roosevelts in Business and Finance* (New York, 1946). Neither of these standard works lists Clinton Roosevelt, nor do the *Dictionary of American Biography* and the *National Cyclopaedia of American Biography*. He was active in the 'Radical' wing of the New York Democratic Party. A. M. Schlesinger, Jr., *The Age of Jackson* (Boston, 1946), pp. 198-199, 438, 492.

[13] Schriftgiesser, op. cit., pp. ix-xii.

[14] 'Memorial of Clinton Roosevelt,' 29 January 1835.

[15] Hackly and Renwick to Ward, 6, 7 January 1835. Record Group 233, National Archives.

water line he would approach close enough to detonate his spar torpedo (operated by a trigger firing three percussion locks in a watertight housing). After this attack the ship would have to steer a back-azimuth course out of range in order to reload mortars, guns, and torpedo. The battery, he said, could never present its side to the enemy. (He did not envisage the presence of *two* enemy ships, one ahead and one abeam, a possibility which would make his tactics very risky.) [16]

Later Roosevelt wrote to the Chairman of the House Naval Affairs Committee mentioning an omission in his explanation: one of the two one-hundred-horsepower engines would throw a column of water of six to nine inches diameter, to wet down the enemy thoroughly and 'render his guns useless after the first discharge or two.' An enemy ship could be sunk by this means alone. (Here was a man who proposed to set the enemy afire, torpedo him, then put out the fire and sink him with the equivalent of a fire hose!) He closed with a brave peroration: a ship needed only to be 'ball proof' to be able to reduce any English or French force 'to insignificance.' (The phrase 'ball proof' shows that he ignored or was ignorant of the latest advances in shellfire.) Roosevelt said he was willing to take his ship himself and destroy a target under the walls of any fort 'while they were discharging on me.' This attitude, he cautioned his correspondent, was not merely the enthusiasm of an inventor for his brainchild, since he did not feel especially attached to this dream boat; many ideas teemed in his imagination, competing for his attention and time.[17]

Roosevelt later sent Representative Ward a model of the ship in a knock-down state, relying on his 'kindness and judgment to put the parts together.' [18] He also wrote another letter to the Naval Affairs chairman, pointing out that here was an opportunity for a memorable speech to the House on the theme of American ingenuity and the ingratitude of republics. Inventors were little encouraged here and too often had to go abroad to be appreciated. This process would end when 'lovers of brute force' were alone in America and the 'almost omnipotent power of the mind would belong to other nations.' [19] Alas for the 'almost omnipotent power of the mind'—Congressman Ward (having patiently assembled the ship model) was forced to tell his imaginative constituent that the House was so busy the proposal would be put over to the next session. However, he added kindly, Chairman White said the Committee on Naval Affairs

[16] 'Explanation of Roosevelt's steam battery and torpedo,' ibid.
[17] C. Roosevelt to White, 13 February 1835, ibid.
[18] C. Roosevelt to Ward, 9 February 1835, ibid.
[19] C. Roosevelt to White, 9 February 1835, ibid.

'thinks well of your plan.'[20] Mr. Roosevelt relapsed into a silence on naval affairs that lasted for five years.

Meanwhile the Navy got its second steamship *Fulton* II, in 1837 (*Demologos* had been named *Fulton* for part of her life). Then came the depression of 1837 and the Congress was less inclined to spend money for technological conversion, nor did naval officers urge it very much, although retiring President Jackson had become a convert to sea power and had abandoned his theory of passive defense.[21] President Martin Van Buren was not very interested in naval matters but the Congress, in 1838, instructed the Board of Naval Commissioners to study the possibilities of steam propulsion. The Board's report, made in 1840, showed it was 'resigned' to the advent of steam power. A report of the Corps of Engineers of the Army, of the same year, was more friendly to the prospect of conversion to steam but the investigators showed they were still thinking defensively and considered 'steam batteries' as auxiliary to coast artillery.[22] The then Secretary of the Navy, James K. Paulding, was firmly opposed to steam conversion but the Congress overrode him and in 1839 authorized the construction of more steam vessels (two of which were launched in 1842).[23] The Congress had shown itself more aware of the meaning of technological change than the executive had. In that year the French government ordered the construction of steam packets to be used for a service to America. They were intended as naval auxiliaries. The British were certainly alarmed by this step[24] and the attitude was probably reflected in American civilian thought.

At this point Clinton Roosevelt roused himself and renewed his application. In a new memorial he reminded the Congress of his 1835 petition which had not been acted upon, 'in consequence of the apprehension of a war with France subsiding. . . .' He said a member of the House Naval Affairs Committee had told him the Committee thought well of the plan and if a war 'were seriously apprehended he had no doubt it would be adopted.' Unfortunately the model he had sent in 1835 had been destroyed by a fire in the Patent Office but if his ship were built he offered to moor it 'within point blank range of any other battery and remain on board to witness the effect of shot and shell until the character of his invention for invulnerability be tested. . . .' (This was his first reference to

[20] Ward to C. Roosevelt, 2 March 1835, ibid.
[21] Sprout and Sprout, op. cit., pp. 106-109.
[22] Ibid., p. 115.
[23] Ibid., p. 114.
[24] Brodie, op. cit., pp. 26-27.

naval shellfire and it is not certain that he referred to anything but mortar fire.) He added an economy note, suited to the depression atmosphere of the day. His ship would need 'no crooked timbers but a few knees' and could be quickly and cheaply built by house carpenters and joiners. He closed by asking for an appropriation of one hundred and fifty thousand dollars[25] (up fifty per cent since 1835).

This memorial was endorsed by the Attorney General of New York, the Mayor of New York City, William Cullen Bryant, Horace Greeley, and thirty-eight others.[26] Separate endorsements were enclosed from Thomas Davenport, the inventor of the electric motor ('the Electro-Magnetic Engine'), and Samuel F. B. Morse who had already proved the practicality of the telegraph although it was not yet in commercial use. Davenport was warmly in favor of the project: 'I think no enemy in the ordinary steam batteries or common ships of war would venture to attack a harbor well supplied with such terribly destructive engines. . . .' Morse thought it worth considering: 'So far as I am competent to judge, I see no objection to its practicability.'[27]

Despite the galaxy of political and technological endorsers Roosevelt's memorial of 1840 received even less attention than the one of 1835. It was quietly filed and forgotten.

Although Roosevelt's scheme was never seriously considered one can see some possible sources and effects of the idea. Fulton's *Demologos* of 1815 also had her paddle in a channel between twin hulls where it was protected from shot. In addition to a broadside of 32-pounders, she was intended to fire two Columbiad one-hundred-pounders which were mounted and aimed below the water level.[28] Roosevelt doubled the number of paddles but reduced the submarine armament; his spar torpedo was merely a single long-gun secured to a spar and made watertight at lock and muzzle.

Experiments with armor in 1834 and after showed cast iron was not useful unless it were inclined at forty-five degrees to the line of fire.[29] Roosevelt's deckhouse was inclined at that angle, and by stipulating that she fight bows-on only, he intended to reduce the angle of ricochet even more. An iron-foundry agent, in 1834, suggested that naval steam engines must be below the water line as far as possible and that only cranks and crosshead be above decks.[30] Roosevelt had precisely this arrangement.

25 'The memorial of Clinton Roosevelt,' 1840, Record Group 233, National Archives.
26 Endorsement, dated 18 April 1840, ibid.
27 Samuel F. B. Morse, 13 April 1840; Davenport to Roosevelt, 3 April 1840; both statements, ibid.
28 Baxter, op. cit., p. 10; Brodie, op. cit., pp. 19-20.
29 Baxter, op. cit., pp. 29-30.
30 Ibid.

As to the effect of Roosevelt's thinking, in 1837 Captain Matthew Calbraith Perry, U.S.N., recommended iron-plated bulwarks over engines so inclined as to cause shot to ricochet.[31] Whether Perry saw Roosevelt's plan or model is unknown, but the New York designer had incorporated that innovation in his plan of 1835.

In larger perspective one can see that Clinton Roosevelt was not one of those who are said to be born ahead of time. In 1840 when the United States, the birthplace of the steam marine, had one steam-driven naval vessel, Great Britain had twenty-nine of her 239 warships powered by steam and their existence was already having strategic effects on sea power in the Mediterranean.[32] But Roosevelt was backing the wrong pusher. His paddles were obsolescent and, by 1845, all leading navies had approved the screw propeller. Because sea-kindly sailing hulls could use the screw propeller, steam could cross oceans and was soon to be on the offensive. The harbor ducks of Roosevelt and like-minded thinkers were obsolete before they were built. Practically any steam-powered ship could evade an 'Invulnerable Steam Battery.' When steam batteries first came into use in combat they were seagoing and screw propelled. They were armored against both shot and shell so that they could fight broadside-to, and were used only on the offensive against fixed targets on shore,[33] a complete reversal of Roosevelt's suggested tactics.

[31] Ibid., p. 31.
[32] Brodie, op. cit., pp. 28-30.
[33] Baxter, op. cit., chapter 5.

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Note abstracted from a notarial record kept by Daniel Moulton of York, Maine, 1746-1784.

A DELAYED VOYAGE. On 13 September 1749, the sloop *Sarah*, Samuel Harris, master, sailed from Boston, 'Laden with Bricks, Boards, Shingles and Rum, bound for Chebucta or Nova Scotia Consigned for Mr Gerrish there; . . . when the sloop got about Ten Leagues N. Easting from Cape Ann the Weather became thick and a storm of rain arising they were obliged to make for a Harbour & in the Evening of the 14th Instant arrived in the Mouth of the Harbour of York where the Wind continuing at North East they could not proceed on their Voyage.'

Samuel Harris, master, Benjamin Jaques and Daniel Carey, seamen, made oath to the about on 15 September 1749.

Contributed by L. W. Jenkins

Before the Nautilus

BY ROBERT C. FOX

FRANK R. Stockton (1842-1902) is today remembered almost solely for his short story, *The Lady or the Tiger,* which still survives as a favorite anthology piece. With this one exception, the novels and stories of this once-popular American author have fallen into oblivion. Topical interest, however, if not literary merit, makes it appropriate at this time to recall Stockton's *The Great Stone of Sardis* (1897). Following the first successful submarine transit of the North Pole by U.S.S. *Nautilus* on 3 August 1958, and the surfacing of U.S.S. *Skate* at the Pole on 17 March 1959, we have heard a number of statements to the effect that 'the dreams of Jules Verne have now been realized.' But Stockton likewise wrote a novel in which a submarine is used for polar exploration; *The Great Stone of Sardis,* in fact, is much closer in detail than is *Twenty Thousand Leagues Under the Sea* to the actual polar transit made by *Nautilus.* It should be interesting, then, to compare Stockton's imaginary voyage to the factual account given by the captain of *Nautilus,* Commander William R. Anderson, in his *Nautilus 90 North.* In making this comparison, we should keep in mind the facts that when Stockton was writing the North Pole had not yet been reached by any means of travel and the modern submarine was still in an experimental stage.

The Great Stone of Sardis is set in 1947, exactly fifty years from the time that Stockton was writing. The hero, Roland Clewe, is a highly successful young inventor who has perfected a submarine capable of arctic exploration but is now more interested in his 'Artesian ray,' a gigantic X-ray machine capable of exploring the interior of the earth. Later, at his laboratory in Sardis, New Jersey, he invents a drill with which he bores through the crust of the earth to discover that the core consists of an immense diamond—hence the 'great stone' of the title. But the chief interest is centered on the submarine *Dipsey* and its voyage to the North Pole. Clewe has no interest in personally taking his submarine to the arctic. Like Admiral Rickover, the guiding spirit behind the atomic submarine who

did not take his creation on its famous voyage, Clewe is content to let others reap honor and glory while he turns his attention to something else. Another interesting parallel concerns the purpose of the voyage. Clewe feels that some spectacular accomplishment is necessary in order to justify himself to the public and to his backers. The American government was in a similar situation after the launching of Sputnik and the success of other widely publicized achievements of Soviet science. Something 'outstanding in the field of science, it was felt, would be necessary to bolster morale at home and prestige abroad, and accordingly plans were rushed to send *Nautilus* to the North Pole before any other nation could perform a similar feat.

The two submarines correspond not only in details of construction but in the problems they face. Both *Dipsey* and *Nautilus* are propelled by electricity, the former receiving power from batteries and the latter from a generator fed by an atomic reactor. The greatest danger that both submarines face is that of submerged ice. *Dipsey* meets this obstacle by means of a small pilot submarine bearing a hydraulic thermometer. The pilot submarine precedes the mother ship, propelled by an electric motor with current received from the latter. When there is a drastic drop in temperature indicating the presence of ice, the fact is relayed to the mother ship which then modifies course accordingly. In order to avoid the hazard of grounding on the ocean floor, *Dipsey* suspends lead lines from her keel; when a suspended lead touches bottom, an electric circuit is closed and a warning bell is sounded. *Nautilus* with her sonar equipment has a less cumbersome means of underwater navigation, but *Dipsey* is far superior in the method of obtaining supply of fresh air. While *Nautilus* has air conditioners and air purifiers, *Dipsey* has a pair of electric gills that extract oxygen from water just like the gills of a fish! So pure is the resulting atmosphere that when *Dipsey* surfaces near the North Pole, the members of her crew are repelled by the natural atmosphere and prefer that of the submarine—a similar reaction, Commander Anderson tells us, was experienced by the crew of *Nautilus*, who had been spoiled by the elaborate system of air purification. Both submarines are prepared to blast their way through ice if the necessity arises: *Dipsey* is equipped with 'ascentional shells' which apparently are similar to the torpedoes carried by *Nautilus* for this purpose. Even down to the humble task of disposing of garbage there is a similarity. *Dipsey* has a 'scuttle-box' with double doors by which refuse can be ejected without flooding the ship. The garbage ejector on *Nautilus* works on a similar principle.

Aside from these inventions, Stockton anticipated some of the difficulties which *Nautilus* later encountered, the most significant of which is the difficulty of maneuvering in the close quarters caused by the shoaling of the ocean floor along with the increasing depth of ice. *Dipsey* runs into this difficulty several times in the North Atlantic. The same difficulty proved to be a major obstacle to *Nautilus* on several occasions: during the experimental under-ice navigation in 1957 (in the same general area where *Dipsey* supposedly operated); in the unsuccessful attempt to cross the Bering Strait in June, 1958; and in the successful but hazardous crossing several weeks later.

Another parallel is a somewhat fanciful one. In Stockton's novel, there is a potential saboteur aboard in the person of the Polish scientist Rovinski. The presence of such a person on a naval vessel in our security-conscious age is not likely to take place, but in a sense Rovinski had his counterpart on *Nautilus*. Commander Anderson tells of one of his crewmen with a penchant for practical jokes. Among other activities was his practice of sending overboard via the garbage ejector sealed bottles with the following message written in Russian: 'Help, I am a prisoner in an American atomic submarine!'

Stockton envisaged other inventions and technical accomplishments in the world of 1947. But in view of the under-ice transit of *Nautilus* and the surfacing of *Skate* at the North Pole, our interest is on the fact that in his imagination an American submarine in 1947 sailed under arctic ice, eventually found open water, and then surfaced at Longitude 69°-30′ and Latitude 88°-42′; from there the ship proceeded to the ice-free North Pole and took possession of it. By reason of these predictions *The Great Stone of Sardis* deserves to be recalled at the present time.

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The Steamer Vesta: *Neglected Partner in a Fatal Collision*

BY ALEXANDER CROSBY BROWN

IT is perhaps surprising that the ship which first so graphically demonstrated the superiority of an iron hull over a wooden one in the event of collision at sea should have faded into oblivion so quickly. Deserving of a better fate was the little French iron screw steamer *Vesta*, survivor of her terrible encounter with the many-times larger, wooden side-wheeler *Arctic* of the Collins Line on the Grand Banks of Newfoundland on the foggy high noon of 27 September 1854.

Naturally the attention of the world was more directed to the heart-rending loss of life when the 'staunch' and magnificent *Arctic* sank. It was she who was considered the crack transatlantic liner of her day, a 'blue riband' winner, and the despicable conduct of stampeding firemen and crew who made off with the insufficient lifeboats, leaving women and children to perish, eclipsed all other news. Briefly, the contemporary journals bestowed laurels on thirty-year-old Captain Alphonse Duchesne for the superior seamanly skill he displayed. He saved his crippled little *Vesta* and brought her safely into port at St. John's, Newfoundland, just before a storm broke which would certainly have finished her off.[1] But, understandably, *Arctic* held the spotlight and *Vesta* was soon forgotten.

The following article will attempt to give all that is presently known about *Vesta* and to describe the fatal collision from her point of view and then to trace the few known facts about her subsequent career. Such, for example, was her near-foundering a second time on her return trip to France.

The steamer *Vesta* was a typical 'propeller' of her day. Built in 1853 at Nantes, France, she measured about 250 gross and 168 net tons.[2] She was rigged as a three-masted bark with hull painted black and salmon-colored bottom, lead-colored poop and boats, and a slightly raked black smoke-

1 *The Public Ledger*, St. John's, Newfoundland, 3 October 1854.
2 *The Herald*, New York, 15 October 1854.

the Newfoundland *Times* from 28 October 1854 until 17 January 1855.[15]

Meanwhile work on the ship progressed through a mild winter. New bow plates were shaped at the foundry and machine shop of C. F. Bennett on Water Street and fitted to the ship under the supervision of a Mr. Kearney. Parenthetically, one can not but marvel at the skill and resourcefulness these ironworkers exhibited in this little, out-of-the-way spot and at this early stage in the technology of iron shipbuilding.

By the first part of March it was obvious that *Vesta*'s repairs would soon be completed and that she could then return home. For the east-bound trip across the Atlantic several British officers and men of the local garrison planned to take passage, having been ordered up for duty in the Crimean War. Captain Martin Petrie of the Fourteenth Regiment was senior officer and, as master of St. John's Masonic Lodge No. 844, he entertained Captain Duchesne at a ceremonial farewell dinner and exercises at the lodge on 14 March 1855. Flowery speeches were addressed to 'Brother Alphonse' and eulogies exchanged during the presentation of a Masonic flag to the French seaman. The latter stated in turn that he 'only discharged his duty' in saving *Vesta* and that he would proudly fly the flag from her masthead on the return voyage.[16]

By 20 March, final farewells were made and *Vesta* departed hospitable St. John's bound for Liverpool carrying twenty-six passengers, officers and their families and various ratings from the garrison. The ship's departure was somewhat anticlimactic. After passing Cape Spear, she proceeded southward a short way along the edge of the ice floes and then was jammed in for twenty-four hours off Petty Harbor only a dozen miles or so from where her journey began.

One of the military passengers availed himself of the opportunity of sending a letter ashore to a friend to report on the trip so far. This was dated Bay Bulls, Wednesday, 3:00 P.M., 21 March and extracts were duly recorded by the press. The writer cited *Vesta*'s arrival 'in a heavy snow storm' commenting further that 'Kearney's new bow has been well tested. . . . The vessel is perfectly tight. . . . Ice extends further than we can see.'[17]

This was the last word on *Vesta* to be received at Newfoundland for some time. Then the news percolated back that she had finally arrived in England after a 'severe and dangerous' passage of seventeen days from St. John's. Probably the source was the same anonymous military correspondent addressing his same Newfoundland friend. In any event, the

[15] The (Newfoundland) *Times*, 28 October 1854, et seq.

[16] *The Public Ledger*, St. John's, 20 March 1855 ('From the *Morning Post* of Saturday last,' i.e., 17 March 1855).

[17] *The Public Ledger*, St. John's, 23 March 1855.

4 May 1855 issue of the *Public Ledger* carried lengthy extracts from another communication dated Liverpool, 13 April.[18]

According to this letter, *Vesta* got clear of the ice off Bay Bulls on 22 March and headed eastward toward the Banks to pass south of the Virgin Rocks. The next day, however, she

> met a frightful gale of wind. . . . Not being able to lay to, we were obliged to run the way it was blowing. [They made 90 miles back toward Newfoundland.] This at night amongst ice, going ten knots in the hour, was frightful. On the 24th about 3 A.M. we were pooped and about an hour after we were struck by a dreadful sea which swept our deck of wheel, skylight, cookhouse, filled the cabin and engine-room and put the fires out, and all believed we were sinking. *The crew deserted us.*

What these mutinous gentlemen did or did not do was not further elucidated. However, the correspondent stated feelingly that there was 'but one seaman on board beside the Captain.' Evidently if the well-disciplined English soldiers had not turned to to help, *Vesta* might well have been lost.

After cutting away the anchor and pumping for eighteen hours without cease, the water in the hold was reduced 'sufficiently to get the fires to light and engines to work.' A consultation was then held to decide whether they should turn back for St. John's or attempt to continue the voyage. Anxiety was felt lest the new bow break off, but again evidences of Mr. Kearney's superior workmanship were demonstrated and, in the end, it was decided to go on. At that point the wind was favorable anyway.

Four days later they had 'another terific gale' and again feared for their lives. But the staunch little *Vesta* weathered that storm too and managed to reach England at the beginning of the second week in April, 1855.

This, as far as is known, concludes specific word concerning the steamer and her movements. The trail is now confined merely to brief entries in various contemporary ship registers.[19] From one it has been determined that she was acquired by the Cie. Générale Maritime of Havre on 11 June 1855, continuing to be registered out of Granville. In 1861 she passed to the ownership of the Cie. Générale Transatlantique. Two years later she was transferred to Spanish registry, being renamed *Ambres* and owned by J. Amann of Bilbao. Under her new name she continued to appear in various issues of the *Bureau Veritas* through 1878. However, the *Underwriters Register of Iron Vessels* covering the period 4 September 1874 to 31 August 1875 carried the cryptic note 'sunk in port of Santander.' For a

[18] Ibid., 4 May 1855.

[19] From information on file at the Peabody Museum, Salem, Massachusetts, supplied by Osgood Williams from data obtained from Alan B. Deitsch, Henry de Cantelar and Ronald H. Parsons.

stack located between main and mizzenmasts.[3] Length, breadth and depth were recorded respectively as 152 feet by 20.3 feet by 10.4 feet. *Vesta*'s steam engine, in this case little more than an auxiliary, was rated at 60 horsepower. Her hull, of iron plate, was compartmented by three transverse watertight iron bulkheads.

Vesta was owned by Hernoux & Cie., one of the wealthiest houses of Dieppe which made a practice of equipping vessels for the Grand Banks fisheries. It was customary for them to send out a steamer in the fall to carry provisions to those fishing vessels which had elected to remain in the Western Hemisphere during the winter season, bringing back to France the fishermen who would not be needed there along with a cargo of codfish.[4] Serving as this type of tender, earlier in the autumn of 1854 *Vesta* had been dispatched to St. Pierre with a load of salt. At the time of the collision she was returning from the little French island with her crew of fifty and a comparatively large number of passengers consisting of 147 fishermen and salters homeward bound before winter set in.

The story of the disaster has often been told.[5] The weather on the Banks in the neighborhood of Virgin Rocks on Wednesday, 27 September, was characterized by periods of good visibility punctuated by patches of thick fog. The splendid *Arctic*, nicknamed 'Clipper of the Seas,' had three days to go before arriving at her home port of New York. With a full passenger list, she had had a routine west-bound crossing from Liverpool and was skipping along the oily swells steaming at twelve knots.

Vesta, bound in the opposite direction and making eight to ten knots with all sail set before a fair wind, was one day out of St. Pierre. Captain James C. Luce of *Arctic* had finished taking his noon sights and had retired to the chart room to work them out. *Arctic* had just ducked into another patch of fog when the lookout's alarmed cry gave warning of imminent disaster. Evidently both ships sighted each other at the same moment. It was reported that the watch officer on *Vesta* screamed 'Luff, luff, there is a ship bearing down upon us!'[6]

But the warning was too late. In another second the ships came to-

[3] As observed by George Burns, passenger on *Arctic*, whose statement appeared in *The Weekly Herald*, New York, 14 October 1854, and other papers.

[4] *The Herald*, New York, 15 October 1854.

[5] As for example, A. C. Brown, 'Women and Children Last: The Tragic Loss of the Steamship *Arctic*,' THE AMERICAN NEPTUNE, XIV, No. 4 (October, 1954), 237-261. See also 'A Footnote to the Loss of *Arctic*,' THE AMERICAN NEPTUNE, XIX, No. 2 (April, 1959), 128-133. Virtually every work on the transatlantic steam navigation contains at least a section devoted to the loss of *Arctic*. One of the better is W. Mack Angas, *Rivalry on the Atlantic, 1839-1939* (New York, 1939), Chapt. IV, 'The end of the *Arctic*.'

[6] Testimony of a fisherman survivor of *Vesta*, Jassonet François, quoted in *The Herald*, New York, 22 October 1854.

gether. It was a glancing blow, but *Vesta*'s iron stem and one of her anchor stocks raked *Arctic* before wrenching off and imbedding themselves in her starboard bow planking just below the waterline. Captain Luce was certain that the vessel *Arctic* had hit was doomed, for as she bumped along *Arctic*'s guards and then sheared away astern, he could see that ten feet of her bows were cut off or crushed with the foremast down and dangling helplessly in the water.

Since little more than a slight jar had been felt on *Arctic*, Captain Luce assumed she could not have been too badly injured and his first instinct was to give aid to the obviously stricken vessel he had run into. Accordingly, he immediately dispatched his first mate and boat's crew to render assistance. But hardly had the lifeboat rowed away before it became apparent that *Arctic*'s wounds were by no means superficial.[7]

Meanwhile, bedlam had broken loose on *Vesta*. Most of her passengers were on deck at the time of the collision and terror seized them in the face of what seemed certain doom. Two lifeboats were preëmpted by the crazed fishermen and quickly launched for the purpose of saving their frenzied occupants by rowing over to *Arctic*. One of the boats capsized in the process, but the other got away defying the captain's order to return. It was this boat with eight or ten occupants which, minutes later, was to be crushed under one of *Arctic*'s 35-foot paddle wheels. All its occupants were drowned or beaten to death by the flailing buckets save one—a fisherman named Jassonet François. He survived double jeopardy for, first he managed to catch hold of a rope and haul himself to safety on board *Arctic* and later, when the liner sank, to survive two days drifting on a raft until he was picked up.

Soon after the collision, however, Captain Duchesne got things in hand and no more lapses of discipline were noted. Meanwhile, although the fore part of *Vesta* was in a horrible mess, it was observed with relief that the first watertight bulkhead was holding nicely and the ship had settled down by the head apparently as far as she was going to.

During this time Captain Duchesne took careful stock of the situation on board. By then, though, the true extent of her damage was known to *Arctic*'s men and she was wallowing at best speed toward land in a futile race against time. Never was she seen again.

One man on board *Vesta* had been killed by the collision and there were others badly hurt who needed what limited attention their fellows were

[7] Captain J. C. Luce's report to E. K. Collins from Quebec, dated 14 October 1854, printed in many contemporary newspapers as the *New-York Daily Times* and *The Herald*, New York, 16 October 1854.

able to give them. A muster of all hands showed twelve missing. These included the fear-crazed men who were in the boat destroyed by *Arctic* and others who had jumped overboard and tried to swim to her just after the collision.

Captain Duchesne's first order was to lighten the head of his vessel by every available means. All cargo, fish, gear, and passengers' effects in the fore part of *Vesta* was summarily dispatched over the side. This contrived to raise the bow somewhat and cutting away the foremast with its tangle of canvas and rigging eased the situation even more. Providentially, the bulkhead was still tight.[8]

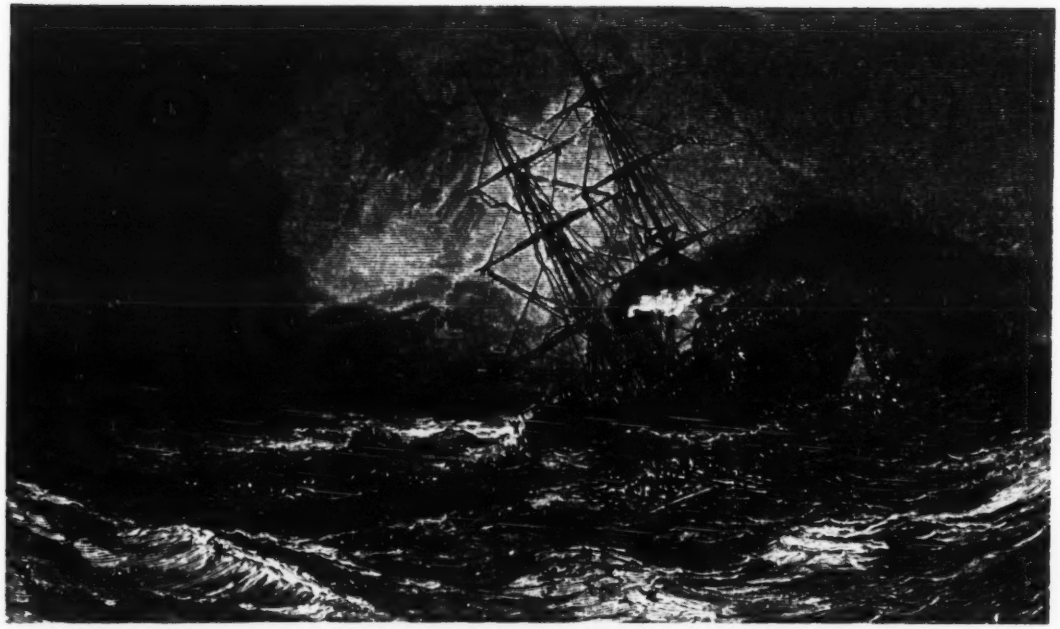
Next was begun the task of reinforcing the iron partition by shoring it up from behind. All available bedding, including about 150 mattresses, pillasses (the sailor's traditional 'donkey breakfast' bedding) and other effects of crew and passengers were stacked behind the bulkhead and backed with boards and planks, the whole being secured with cables and firmly frapped around. A sail was let down over the bow and drawn in as close as could be over the jagged rent.

Captain Duchesne did not relish drifting around a potentially stormy stretch of open ocean. But he wanted to make all as secure as possible before adding the additional pressure to the bulkhead of getting his ship under way. And so for two days little *Vesta* licked her wounds and then, 'under small steam,' a course was laid for St. John's, some hundred miles distant. She arrived safely on 30 September and was moored at the end of the deep fiord-like harbor before the weather commenced to deteriorate as it did later that very day.[9]

All who observed the condition of *Vesta* on arrival at St. John's marveled that she should have survived at all and Captain Duchesne's 'indomitable energy, unwavering perseverance, and most superior seamanship' were justly praised.[10] His ship's company was immediately provided for hospitably by a local French resident, M. Toussaint. But in many cases the unfortunate fishermen, who had with them all their little fortunes composed of barrels of oil and fish, were ruined when their possessions had to be jettisoned to lighten the ship.

Shortly after *Vesta* reached port, two incompletely loaded lifeboats from *Arctic* managed to get ashore at Broad Cove, now designated Cappahayden, on Newfoundland's Avalon Peninsula, a dozen or so miles above Cape Race and some fifty miles south of St. John's. These boats were in

[8] *The Herald*, New York, 15 October 1854.
[9] *The Public Ledger*, St. John's, Newfoundland, 3 October 1854.
[10] Ibid.



Highly fanciful view of the sinking of *Arctic*, 27 September 1854, after her collision with *Vesta* (shown in background).

From 'Our First Century' *by R. M. Davis* (1877). *Courtesy of The Mariners Museum.*

PLATE 6

Captain Alphonse Duchesne, Master of *Vesta*.
Courtesy of Compagnie Generale Transatlantique.

the charge of Second Mate William Baalham who with forty-four of *Arctic*'s more agile male passengers and crew sneaked away before the ship sank and so saved their skins.

Preliminary dispatches received in New York credited *Vesta* with picking up thirty-one *Arctic* survivors at sea.[11] Unfortunately this did not prove to be true, *Vesta* sighting nothing once the ships parted company. Later advices corrected the mistake, so reducing the already tragically slim number of those known to have survived.[12] The thirty-one men in question had been rescued by the bark *Huron* from still another lifeboat in charge of *Arctic*'s Third Mate Francis Dorian.

Heretofore it has been at this point in the narrative that little *Vesta* has dropped out of the picture. Actually, there really is not much more of significance that can be added. The steamer was surveyed for repairs and in due course a new iron bow was built and fitted to her and a new foremast made. Meanwhile, on 20 October, the French navy dispatch boat *Cameleon*, a six-gun wooden paddle steamer, arrived at St. John's from St. Pierre for the purpose of repatriating *Vesta*'s passengers. Capitaine de Frègate Barbet of *Cameleon* was reported in the stilted newspaper phraseology of the day to have 'personally inspected the *Vesta* on his arrival,' going on to report that he 'was utterly astonished how she could be conveyed to harbor.' The French naval officer 'passed a high encomium upon Captain Duchesne for the coolness and extraordinary presence of mind which must have influenced him throughout the perilous emergency caused by the melancholy collision with the *Arctic*.'[13]

The account concluded with the statement that Captain Barbet would 'strongly recommended Captain Duchesne to his government for distinction.'

Deservedly, in due course the recommendation was accepted. *Vesta*'s master later was made chevalier of the Legion of Honor.[14]

Cameleon left St. John's on 22 October and Captain Duchesne and his crew settled down to await the completion of repairs. Evidently the men had little to do and one can readily appreciate the necessity that prompted Duchesne to insert a public notice in the newspapers to the effect that he would 'not be accountable for any debts contracted by the Crew of the steamer *Vesta* under my command.' This ran regularly in each issue of

[11] Dispatch received from Halifax dated 12 October 1854, in *The Weekly Herald*, New York, 14 October 1854.

[12] *The Herald*, New York, 15 October 1854.

[13] The (Newfoundland) *Times*, St. John's, 28 October 1854.

[14] Biographical note written on the back of a photograph of Captain Duchesne sent to the writer by the Chef de la Publicité, Compagnie Générale Transatlantique, Paris.

number of years she had plied between Antwerp and the northern part of Spain.[20]

So ends our record of *Vesta*. After returning from Newfoundland, her skipper continued to follow the sea in ocean-going steam vessels of various types and in various services and he became one of the most highly respected officers in the French mercantile marine. Duchesne was master of the new steamship *Washington*, first of a new line to New York inaugurated in June of 1864. Five years later, he assumed command of *Péreire*, then France's most magnificent liner, and was elevated to the rank of officer of the Legion of Honor—the only deep-water French shipmaster (capitaine au long cours) to enjoy this distinction. Captain Duchesne died on 4 October 1871 at the comparatively early age of forty-seven having followed the sea continuously since 1837 when he first signed on as a thirteen-year-old boy.[21]

A photograph of Captain Duchesne at the time he was master of *Washington* is in existence.[22] But the only known contemporary view of *Vesta* is the little woodcut that was published in the *Illustrated London News* of 28 October 1854 showing her as she appeared on arrival at St. John's after the collision.[23] It is hoped that this account may stimulate further researches into the career of a rugged little vessel that has deserved better at the hands of posterity.

[20] *The Belgian Shiplover*, VI, No. 1 (January-February 1955), 9-10. Note by Ronald Parsons.

[21] See note 14.

[22] Ibid.

[23] *Illustrated London News*, 28 October 1854, p. 415. Reprinted THE AMERICAN NEPTUNE, XIV, No. 4 (October, 1954), Plate 29.

Alexander Crosby Brown, one of the original Editors of NEPTUNE *and a frequent contributor to this journal, needs no introduction to our readers. The present article is one of the by-products of a trip he made in September, 1958, to Newfoundland, where he did research in the Gosling Memorial Library, St. John's.*

CORRECTION

Charles F. Batchelder, Jr., has drawn our attention to the creation of a new 'ghost' whaleship in the article by Captain John Campbell, July 1959 issue of NEPTUNE, page 210. This is the whaler *Panther* caused by misreading Augustus D. Rogers' letter of 10 December 1841. 'This vessel must have been the bark *Pantheon*, of Fall River, Jabez J. Pell, Master, on her voyage of 1839-1842.'

William Mountaine, F.R.S., Mathematician

BY CAPTAIN W. R. CHAPLIN

WILLIAM Mountaine was born at Clint, a mile from Ripley in the West Riding of Yorkshire, between the years 1700 and 1705. The local tradition is that he was self-taught but it is probable that he had first attended the Free School at Ripley which was founded in 1702 and that he subsequently went to a higher school where his flair for mathematics was developed. Nothing however can be traced of his early life, and the first we learn of him is in the early 1740's when he was already well established as a teacher of mathematics and navigation, and about to become the mathematical examiner to the Trinity House.

This latter office was not a new one. The need for an examiner first arose in the latter part of the seventeenth century when Pepys had interested himself in the Christ's Hospital School and in encouraging the boys to be apprenticed to the sea service, and when he became Master of the Trinity House the Corporation assumed the duty of examining the scholars in mathematics before being bound apprentice, which duty was confirmed in their Charter by James II in 1685.

The Corporation were already examining the masters and mates in the Royal Navy, reporting to the Navy Board on the candidates' proficiency and for what rate of ship they were qualified. These examinations continued to be held at the Trinity House for nearly 150 years and only gradually ended owing to changing conditions.

Furthermore, when the Earl of Pembroke was Lord High Admiral,[1] it was ordered in 1702 that schoolmasters be appointed to certain ships of the Royal Navy above a stated rating, to teach the young officers the art of navigation, and that the qualifications of candidates should be certified by examination at the Trinity House before they made application for appointment to a ship. Seymour's 'Survey of London,' 1735, describing the various duties of the Trinity House refers particularly to this, saying 'All Mathematical Teachers have their respective Qualifications and Learn-

[1] Thomas, Eighth Earl of Pembroke, had been Master of the Trinity House, 1692-1694.

ing examined and certified, who have been of late appointed aboard by the Lord High Admiral, for the teaching of Volunteers that go on board the King's Ships.'

The examiners appear to have been appointed exclusively from mathematicians and teachers of navigation most of whom during the seventeenth and eighteenth centuries had their schools around Tower Hill and the riverside parishes. It was a part-time office; the emolument was small but the fees compensated for that, and coincident with the appointment they continued their teaching establishments, so that it would frequently happen that the tutor of one day was the examiner of the next, a pleasant arrangement evidently acceptable at that period. It seems, too, that both prestige and influence attached to the office of the examiners.

The names of the first examiners cannot be traced, but one, Thomas Weston, was appointed assistant mathematician in April 1719 and in due course became the principal. He was succeeded by John Weston (probably his son) in June 1728. The latter, who is described as of Greenwich, Co. Kent, died in June 1744. He bequeathed his mathematical instruments and books to his brother-in-law, James Rossam, and his estate to three trustees, James Rossam, Henry Edwards and James Gunter.

A month later (in July) the Trinity House selected his successor and, of the three applicants, James Rossam was appointed, William Mountaine being one of the others. Rossam, however, died only six months later, in December 1744 and, on 5 January following, William Mountaine was appointed in his place; the entry in the minute book is 'William Mountaine, Teacher of the Mathematicks at Shad Thames, appointed at the salary of Twenty Pounds a Year.'

Shad Thames, adjoining Rotherhithe on the south side of the river and opposite Tower Hill and Wapping, was then one of the principal shipbuilding parishes on the Thames-side, and around it were established all the ancillary trades to shipbuilding and the homes of mariners and shipwrights.

The inconsiderable salary of twenty pounds a year—although equivalent to a much larger sum today—appears to have been only a retaining fee as there is good evidence that a fee attached to every examination. However, two months after his appointment, Mountaine petitioned for an increase 'owing to the increase of my business, since the Lords Commissioners of the Admiralty have invited more School Masters into the Navy.'

His salary was then increased to thirty pounds a year but, two years later when the extra work seems to have ended, at least temporarily, it was

reduced to twenty pounds, but in September 1756 again increased to thirty, Mountaine petitioning 'that the business of Mathematical Examiners had increased to equal to what it was during the late War.'

Together with his duties as examiner, Mountaine continued his private practice as a tutor, and a contemporary advertisement by him is, 'Teacher of the Mathematics, in Shad Thames, Southwark. Young Gentlemen boarded.' From the advertisements of others it appears to have been the custom during the eighteenth, and in fact well into the nineteenth century, for the London teachers of mathematics and navigation to board and lodge their pupils.

A recently published diary of one of his candidates, 'The Journal of Nathan Prince, 1747' is of particular interest in that it is probably the only intimate impression of this scholarly and withal very kindly person, as well as of his examination at the Trinity House and subsequent interview at the Admiralty.[2]

Nathan Prince, of Massachusetts, who had graduated from Harvard was evidently attracted by the call for schoolmasters in the Royal Navy, and went to England in H.M.S. *Vigilant* as schoolmaster for the voyage to Portsmouth, where he left the ship and continued by road to London with the intention of sitting for the Trinity House certificate enabling him to present himself to the Board of Admiralty for a permanent appointment.

He gives a vivid description of his journey to London before the days of regular stage coaches, and of his meeting with William Mountaine, to whom he had a letter of introduction from a friend in New England. Mountaine invited him to dinner, during which he gave him an outline of the examination syllabus. He also lent him books from which to prepare himself, and gave him considerable encouragement by saying that, if he was deficient in some subjects and good in others, allowance would be made.

In due course he was examined at the Trinity House, and Prince's account of it leaves the impression that the examiner was easy to one whom he appreciated had had a good grounding in the subjects. His passing was sent to the Board, and the Trinity House minute book records, 27 June 1747, 'Mr. Nathan Prince producing a certificate of his Sobriety and good Affection to his Majesty, he was examined, and being found qualified for a Schoolmaster in his Majesty's Navy, was certified accordingly.'

William Mountaine wrote several works in the field of mathematics and navigation, and revised some earlier ones. In 1744, he revised and corrected James Atkinson's *Epitome of the Art of Navigation,* of 1694. It was

[2] THE AMERICAN NEPTUNE, XVI (1956), 81-92.

published by Mount and Page,[3] of Tower Hill, and was still being reissued by them nearly forty years after. Two years later, in 1696, Mountaine compiled, in conjunction with James Dodson, an eminent scholar who had earlier written a standard work on mathematics, *An Account of the Method used to describe Lines on Dr. Halley's Chart of the Terraqueous Globe.* In the same year, the *Sea Man's Vade Mecum and Defensive War by Sea* was a revision of R. Park's *Defensive War by Sea* written in 1704, and was reissued four times until 1783. Mountaine's *The Mariner's Compass Rectified, with Tables of the Sun's Declination,* in 1755, was largely a revision and correction of the same work by Andrew Wakely, first published in 1633, and *The Mariner's New Calendar,* published two years later, was also a revision and improvement of an earlier work by Nathaniel Colson, in 1675.

The Practical Sea Gunner's Companion was written about the same time. On the last page of this work Mountaine makes known his school, and that he teaches 'The Classics, Writing, Accompts, Book-keeping after the Italian form, Navigation, Astronomy, the Use of the Globes and other Branches of the Mathematics . . .' and 'Gentlemen boarded by William Mountaine in Gainford Street, Southwark.'

In recognition of his work in the sphere of navigation Mountaine was elected a Fellow of the Royal Society in 1751. His contributions to the *Philosophical Transactions* were: 'On the Variation of the Magnetic Needle,' 1757; 'A Short Dissertation on Maps and Charts,' 1758; 'Extraordinary Effect of Lightning,' 1759; and 'A Defence of the Mercators Charts,' 1763.

His last published work was *A Description of the Lines Drawn on Gunter's Scale,* in 1778. In April of that year the Trinity House minute book records a letter from him asking the Corporation to accept a copy of the work. A year later his name appears for the last time when the Elder Brethren recorded with regret his death on 2 May 1779, and that he had been their mathematical examiner for many years. He had died at his home in Gainsford Street, Shad Thames, where he had lived for many years, and was buried in the Parish Church of St. John's.

Throughout his life he had given his services freely in the realm of education as well as in charitable works, and for several years was a Governor of St. Thomas's Hospital. Although many years a resident of London his interest in his birthplace in Yorkshire continued throughout his life and it benefited by his legacies.

[3] Mount & Page, one of the principal publishers of nautical works and charts during the eighteenth century. For an account of the 250 years of this firm see 'A Seventeenth Century Chart Publisher,' THE AMERICAN NEPTUNE, VIII (1948), 302-324.

About 1750, one William Coates, of Ripley, was much concerned at the state of the road between Clint and Ripley, being so bad that the children of Clint were deprived of the benefit of the school at Ripley during the winter months, and he donated a sum of money towards the building of a school at Clint. In this he was supported by the rector, who made an effort to augment Coates's gift by public subscription.

This, however, meeting with a disappointing response, Coates decided to try and get some further donation from outside the district, and wrote to his old friend, William Mountaine, asking his assistance and also that he would approach Rear-Admiral Robert Long,[4] another native of Ripley then living in retirement in London, for a contribution. Admiral Long favored the project and agreed to subscribe to it. Later on, in 1760 he gave further assistance by endowing the school with the rent of a farm and some land in the locality, of the value of £45 a year, and appointed trustees including William Mountaine and the Rector of Ripley to administer it. With these various gifts the School of Burnt Yates in Clint became safely established.

William Mountaine became also one of the school's principal benefactors. In addition to gifts during his lifetime he bequeathed much to it, as well as making legacies to friends in the neighborhood. His wife, having predeceased him, and apparently having no family, much of his estate was left to schools and charities. The Parish Church at Southwark, the churchwardens, the poor of the parish and the charity school there were all remembered in his will, with a legacy to the Librarian of The Royal Society. His principal bequest, however, was to the Burnt Yates School. It included a sum of money in trust, and £140 a year from the tolls of a turnpike road at Wetherby in Yorkshire.

Mountaine gave his library to the school, and desired that his executors should have printed labels pasted in all the books 'having a neat scroll around the inscription: The Gift of William Mountaine, F.R.S. to Clint School.' In addition, he gave a pair of globes, two telescopes, manuscript charts and his mathematical instruments. A separate legacy provided that the interest on it was to be paid to successive schoolmasters for the care of his books and instruments.

Before his death he had given, to be hung in the trustees' room at the school, full length portraits of King George II and Queen Caroline. These are still at the school, together with the portraits of himself and his wife

[4] Rear-Admiral Robert Long: Captain of *Russell*, 80 guns, in the Squadron under Admiral Rowley, in 1739, and thereafter served in the Mediterranean for some years, after which he returned to England and retired with the rank of Rear-Admiral in 1747, and lived in Holles Street, Cavendish Square, London, until his death on 6 June 1771.

which had been bequeathed by his will. There is also a portrait of Admiral Long.

The library contained an interesting collection of over 560 volumes, mainly on mathematics, navigation and science. It was, however, eventually sold, in 1898, to a Leeds bookseller for a very small sum, and is now probably scattered far and wide.

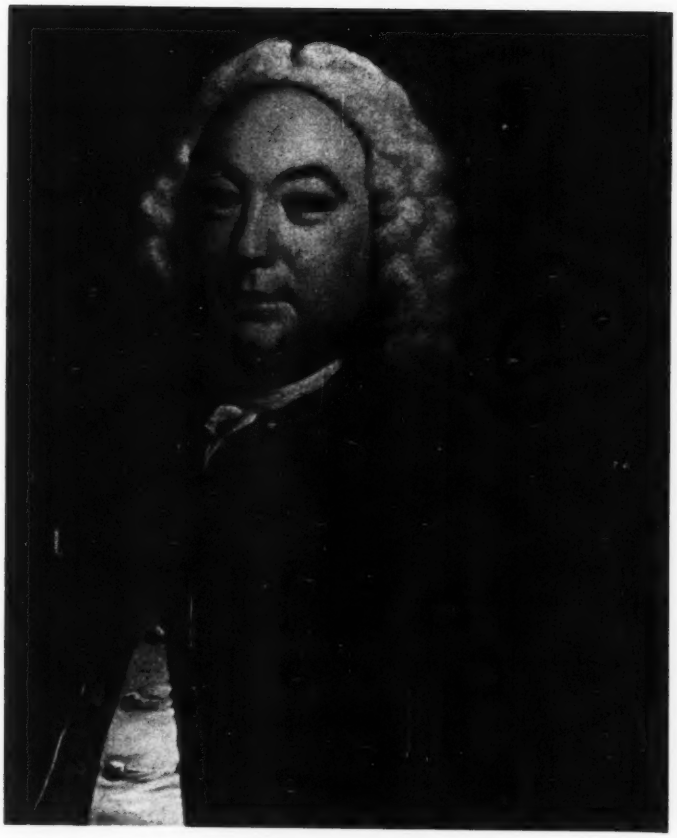
As a result of subsequent educational enactments the school has been brought into the general scheme for education, but the traditions of its founders are preserved by the retention of the former Trustees' Room, with the portraits of those who had given generously to it so long ago.

Captain William R. Chaplin has been a member of Trinity House for over thirty years and is now Senior Warden of that venerable institution. He went to Trinity House in 1928 *from the command of S.S.* Jervis Bay, *a ship which made a name for herself in the late war. Captain Chaplin has contributed several important articles to* NEPTUNE *since its inception.*

Note abstracted from a notarial record kept by Daniel Moulton of York, Maine, 1746-1784.

CONTRACT TO BUILD A VESSEL. On 4 September 1750, William Hight of Berwick, Trader, entered into an agreement with Stephen Paul of Kittery, Shipwright, to build a vessel 'Fifty Feet Keel, Twenty & a Half Feet Beam Nine and a half Feet in ye Hold, Double Deck, Four Feet betwixt Decks & to Caulk the said Vessell & finish her to a Cleat, head excepted, & to have the said vessell ready to be Launched on or before July 1st Next.' Hight was to furnish all materials for the building and Paul was to be paid £133.6.8 Lawful money in Bills of Credit equal to £1300 Old Tenor, one-half in West India goods and provisions and one-half in Hampshire money, to be paid on or before 1 July 1751 at the house of Thomas Mogridge in Sommersworth. Hight failed to provide materials as required and Paul 'protested' the agreement on 22 May 1751.

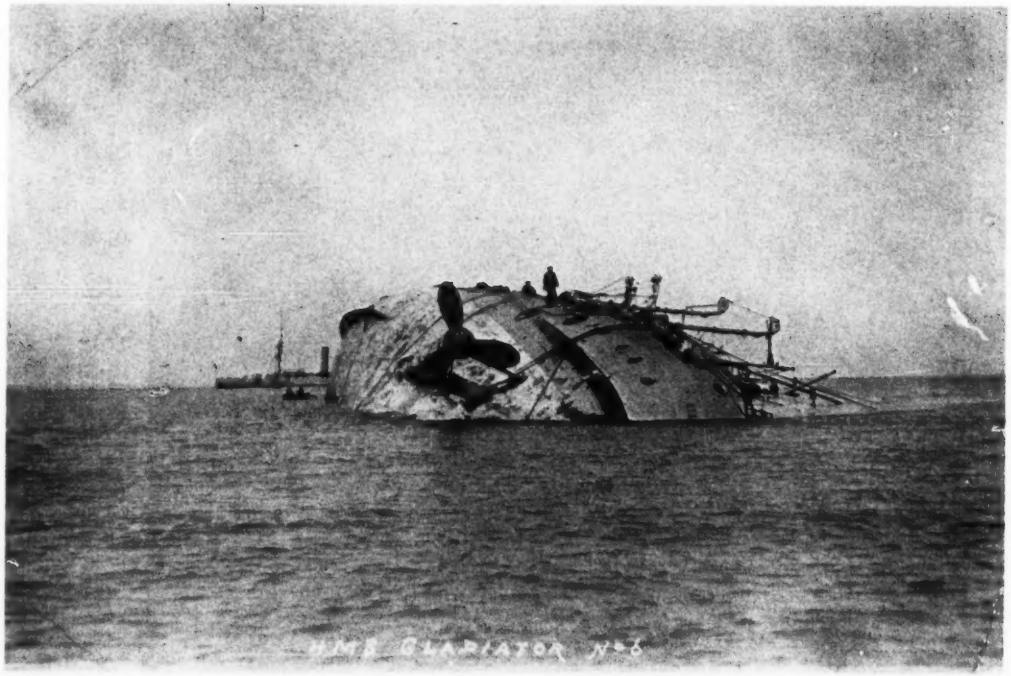
Contributed by L. W. Jenkins



William Mountaine, F.R.S., 1779.
Courtesy of Burnt Yates School.

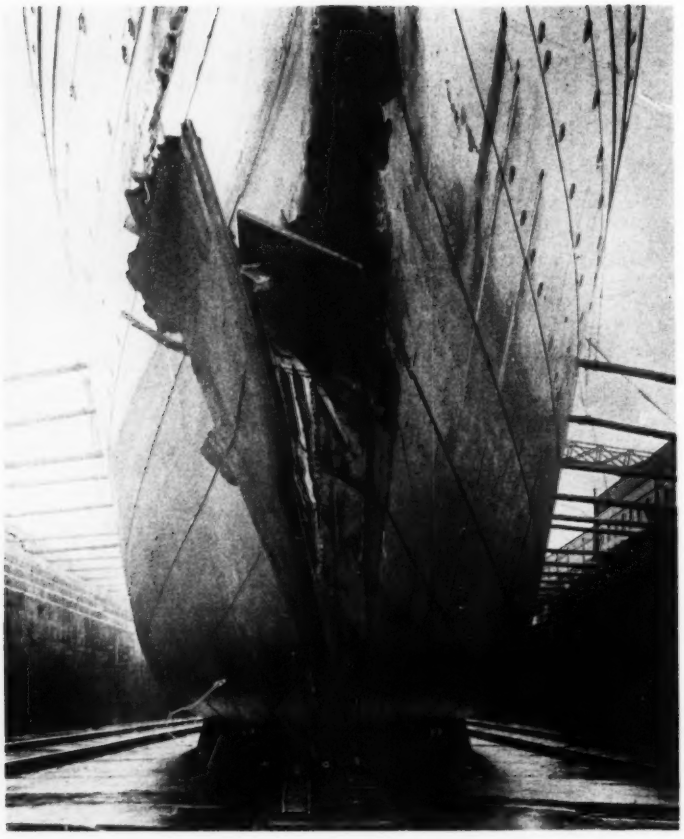
Burnt Yates School, North Harrogate, founded by William Mountaine.

Courtesy of Burnt Yates School.



H.M.S. *Gladiator* lying on starboard beam on Black Rock Shoal in the Solent, off Isle of Wight, after collision with S.S. *St. Paul*.

PLATE 10



S.S. *St. Paul* in drydock, Southampton, showing damage below waterline, and armor plate of *Gladiator* embedded in liner's fore-peak.

The St. Paul-Gladiator *Collision*

A Personal Narrative

BY FRANCIS E. CROSS

THE collisions which frequently occur between vessels of all types and nationalities, not only on the high seas and inland waterways but within harbor limits, comprise several categories. One of these categories pertains to collisions between merchant and naval vessels. If such a collision proves disastrous to one or both of the vessels involved, as has sometimes happened, the double inquiries which are sure to follow usually are thorough to the nth degree, and indeed should be.

Strangely enough, the official examinations into all categories of collisions show that, in many instances, the colliding vessels had been in plain sight of each other for many minutes. Thus, barring failure of steering gear or some extraordinary circumstance beyond human power to cope with, the collision could have been avoided. This, every bridge officer who inquires into the cause of a collision is fully aware of. He knows that the calamity would not have happened had the burdened vessel, and in fact both vessels, complied with the 'Rules of the Road.'

Three years after the adoption, in 1892, of the international rules of the road for safeguarding lives and property at sea, the Japanese cruiser *Chishima* was sunk in collision with the British steamship *Ravena* off the coast of Japan, and seventy-five of the cruiser's crew were killed or drowned. The year before, a worse disaster was that of the emigrant steamer *Utopia* which collided with the British battleship *Anson* in Gibraltar Harbor. The merchantman was lost, and 564 of her passengers and crew. An earlier collision, off Plymouth, England, between the British passenger and mail steamer *Osprey* and H.M.S. *Amazon* resulted in the foundering of both vessels and the loss of many lives.

The collision between the American transatlantic liner *St. Paul* and the British cruiser *Gladiator* occurred in the Solent over fifty years ago. Yet the circumstances which resulted in this disaster, namely, the failure of one of the vessels to observe the rules of the road, could be repeated today. For

neither radar nor any other modern navigational device, valuable as such aids unquestionably are, would have prevented the crash. In short, only by both vessels obeying the rules of the road could the *St. Paul-Gladiator* collision have been averted.

Reports of the collision made the headlines on both sides of the Atlantic for several days running; hence the news was the subject of considerable naval and maritime comment. As I was third officer of *St. Paul* at the time, and stationed on the bridge, I have vivid recollections of the unfortunate incident, as well as of both the admiralty court and court-martial proceedings which followed.

St. Paul belonged to the American Line. She was one of four famous ships—they were two sets of twins—which for a number of years had carried passengers and mails between United States and England via France, and return, and which were among the largest, fastest and most popular liners afloat.

In 1898, just before the outbreak of the Spanish-American War, the four liners were chartered by the government and turned over to the Navy. They were at once armed and fitted for active wartime service. After commissioning they continued to be officered and manned, in part at least, by their regular deck and engine room personnel. Assigned to command U.S.S. *St. Paul*—the first ship in the Navy to bear that name—was Captain Charles D. Sigsbee, U.S.N., of the sunk battleship *Maine*.

St. Paul was ordered on scouting and blockading duty in the Caribbean and off Puerto Rican ports. Throughout the war she served with enviable distinction and, on one occasion, off San Juan, boldly engaged a fighting ship of the enemy—the torpedo-boat destroyer *Terror*. The Spaniard soon was hit by a five-inch shell that penetrated her engine room and went out below the waterline. At once disabled and leaking seriously, the destroyer headed for the safety of San Juan harbor where, to be saved from sinking, she was grounded on Puntilla Shoal.

When the Spanish War ended, *St. Paul* and her sister ships were returned to their owners. After reconditioning, the four liners resumed their sailings across the Atlantic. Year in and year out they continued maintaining regular service between New York and Southampton via Cherbourg.

H.M.S. *Gladiator* was a second-class protected cruiser, 5,750 tons displacement, with twin screws and an underwater ram bow. Launched in 1896, upon completion she joined the Portsmouth Division of the Home Fleet. When fully manned, her complement was 450. At the time of her

collision with *St. Paul,* only 280 were on board, most of whom were reservists on a training cruise.

St. Paul, commanded by Captain Frederick M. Passow, was scheduled to sail from Empress Dock, Southampton, at noon, 25 April 1908. Before daylight that morning a northwest snow storm—said to have been unprecedented for that season of the year—swept across the southern portion of the British Isles. Although by forenoon the storm had gradually abated, the boat train from London, with over 300 passengers and 2,000 sacks of mail, arrived late at dockside. When ready to depart, the ship was one hour late.

The weather and visibility having greatly improved, there being only light snow squalls, the liner cast off and, assisted by tugs, entered Southampton Water where she headed downstream. Like on all our sailings from the English port, officers and crew and a Trinity House pilot were at stations, and would so remain until after passing the Needles, the pinnacle rocks lying just off the southwest extremity of Isle of Wight. On the bridge were the captain, pilot and three officers, as well as quartermasters and cadets. And in the engine room, engineers and crew personnel also were at stations.

The visibility was not less than two miles, except during the intermittent snow flurries when it decreased to half a mile. Proceeding as weather conditions allowed, it took an hour to arrive in the Solent. The ship then was steadied on her course towards Needles Channel just as ebb tide was making. En route, we saw the dim gray outline of the land on either side: Hampshire to starboard, Isle of Wight to port. And, keeping to our side —the west side—of Solent Channel, the buoys and other navigational marks were distinctly seen and noted in the log.

Before arriving off Yarmouth, Isle of Wight, a westerly snow squall appeared in the distance ahead. It was crossing our pathway. At once half speed was ordered by engine room telegraph and immediately answered. Shortly the lookout in the bow, and then the lookout in the crow's nest, reported a vessel 'half a point on the port bow.' In another moment the craft was seen from the bridge. She was about half a mile away and apparently approaching. Then appeared a puff of steam against the dull background of her funnel. Before it faded away in broken wisps to leeward we heard a single blast from her whistle. At once the pilot ordered one blast in reply, thereby indicating a port to port passing, in obedience to the international rules of the road. But not many seconds later the oncoming vessel, now seen to be a cruiser, was attempting to cross our bow.

'Stop engines!' ordered the pilot, which was done. And in a moment or two, alarmingly he exclaimed: 'She'll never make it!' The two vessels being *in extremis*, the next order was 'Full astern, both engines!' Soon afterwards came the terrible impact of ships in collision.

We had rammed the cruiser on her starboard side at an angle of about thirty degrees, our sharp bow penetrating her after boiler room nearly as far as her centerline. At once borne under by the force and weight of the larger vessel, the warship listed heavily to starboard. From her bridge, the captain called to our captain to keep going astern. As we backed away, *Gladiator* partly righted, but the steady inflow of water, together with the gale on her raised port beam, caused her to list increasingly. It was at once evident that her captain was trying desperately to maneuver his fast-dying ship to leeward on the nearby Isle of Wight shore. Aided by wind and tide, the cruiser took the ground on the outer edge of Black Rock Shoal, then without warning heeled sharp over on her starboard beam. At once many of her officers and crew, trying hopelessly to clutch at holds on deck, suddenly found themselves overboard in the bitterly cold water. Some struck out for the beach, about four hundred yards away, but only a few of the stronger swimmers made it. Most of the crew managed to clamber up the now perpendicular decks to the exposed port side of the hull where they remained to await rescue.

After backing clear of the critically stricken warship our ship's bow was found badly stove in, both above and below the waterline. Sea water flowed into the forepeak, but its well-stiffened bulkhead withheld the heavy pressure against it. Fortunately we suffered no casualties.

Orders were given to swing out and stand by to lower the lee, or port, lifeboats. I asked to be relieved of my station to take charge of the forward boat. Our work was somewhat hampered by the iced condition of blocks, falls and gear. We were the first to get away and, in a choppy sea, pulled to a position between the cruiser—already grounded and on her beam ends—and the shore. Passing floating bodies of the drowned, we succeeded in reaching the living, most of whom were in the final throes of a losing struggle to survive. These we landed on the shingly beach, then pulled out to the cruiser to receive a boatload of men from her upturned hull. Meanwhile, three other *St. Paul* boats arrived and engaged in the rescue. The last to leave the doomed vessel was of course the captain, who was brought ashore in one of our boats.

Other rescue boats put out from Yarmouth, Isle of Wight, opposite to which the collision had taken place; and a Coast Guard lifeboat from the Hurst Castle station on the Hampshire shore had arrived. Owing to *Gladiator*'s heavy list only one or two of her boats could be launched.

Officers and soldiers from Fort Victoria, nearby Yarmouth, had hastened to the shore and aided notably in saving lives and tending to the immediate needs of the shipwrecked seamen. Those suffering from shock, exposure or injury were taken to the hospital at the Fort; others were received in private homes.

The final count of fatalities aboard *Gladiator* was twenty-seven, nearly all of whom had drowned.

St. Paul's lifeboats returned alongside and were hoisted. The damage to the liner's bow rendered her unseaworthy; therefore she went back to Southampton and berthed at Empress Dock to land passengers and mails. (A few days later the passengers embarked, and the mails were loaded, aboard S.S. *Majestic,* of the White Star Line, sailing for New York via Cherbourg.)

The examination in drydock of *St. Paul*'s damage showed her stem completely cut through and laid open to starboard by a two-and-a-half or three-inch steel plate from *Gladiator*'s protective deck. When *St. Paul* went astern, the plate had been wrenched away and embedded in her forepeak. As the repairs would take several weeks to finish, the liner would lose at least two round voyages.

Promptly following the disaster were coroner's inquests and other hearings. Later came court proceedings at the admiralty division of the law courts in London. The court was presided over by Sir Gorell Barnes with two Trinity masters assisting. The plaintiffs in the action were 'the Commissioners for executing the office of the Lord High Admiral of the United Kingdom, and the officers and crew of H.M.S. *Gladiator* suing for their lost effects.' There was a cross-action by 'the owners of S.S. *St. Paul* for damages against the captain of H.M.S. *Gladiator,* and the navigating officer of *Gladiator*.' The officers and crew members of either vessel who had witnessed the collision were summoned for questioning.

An interesting sidelight of the impressively decorous court proceedings was a mild reproof administered by the president to the counsel for the Admiralty who, in referring to *Gladiator,* had two or three times used the expression 'the King's ship.' Finally from the bench came this interjection: 'The counsel will please refrain from using the expression, "the King's ship." The King's ship has no more right than any other ship.'

The testimony of witnesses concerning the whistle signals exchanged between the two vessels as they approached was conflicting. And, the counsel for each vessel charged the other vessel with failure to observe the rules of the road. But the evidence for the Admiralty proved ill founded; therefore the judgment handed down was, briefly, '*Gladiator* alone to blame.' Which, however, was at once appealed. Shortly afterwards, when the case

came before the higher court, the admiralty counsels contended that *St. Paul* should be held partly to blame for proceeding at excessive speed under the weather conditions then prevailing, and in violation of Articles XV and XVI of the international rules of the road. This contention was not sustained. The Lord Chief Justice, concluding the case, said: 'Those two vessels were at such a distance that by ordinary prudence they could have avoided colliding with each other. That was brought about by the wrong maneuvering by those on board the *Gladiator*. Under all the circumstances the appeal must be dismissed.'

This final judgment was not given out at the time, in order not to prejudice the members of the naval tribunal appointed to try *Gladiator*'s commanding officer, who had accepted full responsibility.

In the meantime, the question of whistle signals exchanged between *St. Paul* and *Gladiator* cropped up again. This came about in a letter from Lady Montagu of Beaulieu to *The Times*, London. The writer stated that, on the afternoon of the collision, while on the porch of her residence, situated on the west side of the Solent, she had heard two blasts, apparently from *St. Paul*'s siren, sometime after the liner passed downstream. This disclosure having been brought to the attention of the admiralty court, and in view of the previous conflicting evidence of witnesses, Lady Montagu was summoned to appear at a special convening of the court; and, as well, Captain Passow and myself, for I had given the single blast, as ordered, and it was a blast on the whistle.

Lady Montagu was asked to take the stand. Under questioning, she replied that she could quite plainly distinguish the difference between a siren and a whistle blast; and that she had heard two siren blasts. But when Captain Passow took the stand, the fact was brought out that *St. Paul*'s sound signals were made by whistle; that the liner was not equipped with a siren.

The court-martial of *Gladiator*'s captain was held in Portsmouth Harbor on board H.M.S. *Victory*, Admiral Lord Nelson's famous flagship at Trafalgar. Among the witnesses summoned for questioning were officers of *St. Paul*. We went out aboard the historic *First Rate* on three consecutive days. Each witness in turn individually was escorted into the great cabin where, on both sides of a long table and in full dress uniform, sat the prisoner's peers, presided over by a rear admiral.

The result of the court-martial, as published, was as follows: 'The court finds that the charge is partly proved in that prisoner hazarded his ship by default and not by neglect.' The sentence then passed, was: 'The court having found the charge against the prisoner partly proved, . . . adjudge him to be reprimanded and dismissed H.M.S. *Victory*.'

Toward the end of *St. Paul*'s detention of eight weeks in Southampton, in an editorial entitled 'British Justice and Seamanship,' *The New York Times* commented:

> It is not yet two months since the *St. Paul* sunk the *Gladiator*, and the *St. Paul*'s repairs are hardly completed. Yet already the Admiralty has dismissed the *Gladiator*'s Captain from his ship, and the British courts have adjudged that the American Captain is blameless. . . . As the decision of the court is between ship and ship, it follows that the *St. Paul*'s damages will be paid, and the incident will then be ended with all the reparation the case admits.

Concerning the still-grounded *Gladiator* lying helplessly on her side, the Admiralty and private salvage firms worked jointly to free her from her imprisonment. Meanwhile, she was being gradually dismantled. Many months later—by then she had been reduced to a hulk—she was finally floated and towed away to be broken up for scrap, leaving few if any of her bones to corrode on the hard bottom of Black Rock Shoal.

Francis E. Cross is a retired shipmaster, born in New York, 1881. *He went to sea in* 1899 *and spent two years on the School-ship* St. Mary's. *On graduating, he made a voyage in the schooner,* Theresa Wolf, *before changing to steam. Captain Cross continued at sea for the next* 40 *years,* 27 *of which were in command of merchant and government vessels, both cargo and passenger, on many of the world's principal trade routes. In World War I, he first commanded an Army Transport, then the Navy Transport* Munalbro. *In World War II he was retired from the naval reserve on account of physical disability. For the next five years he served with Division of Operations, War Shipping Administration and, later, the Maritime Commission. He is also a retired master, United States Lines, and has contributed articles to* The Naval Institute Proceedings *and* Rudder.

Note abstracted from a notarial record kept by Daniel Moulton of York, Maine, 1746-1784.

WRECKED ON KITTERY SHORE. On 5 January 1750, the schooner *John,* Thomas Holland, master, 'sailed from Boston bound for Halifax & anchored in Cape Ann Harbour the Night following. The next Morning they sailed from Cape Ann and the next day met with a Strong Gale of wind which obliged them to bear away and with much Danger and Difficulty got into Squam Harbour where they lay until the 21st Instant when they Sailed for Halifax in the Morning. At one P.M. wind about South a Strong Gale, bore away for Piscataqua Harbour where they came too both anchors ahead & Rode till noon the 22st at which time the Gale was so Violent that they parted both Cables & drove a Shoar on Kittery side of the Harbour it being on the 2d Quarter of the Flood. The Vessell Bilged & Stove in in many places to her utter Ruin & Distruction and 'twas with much Difficulty & Danger all hands got safe on Shoar.'

Thomas Holland, master, Joseph Wilson, mate, and Mathias Ellis, Mariner, made oath to the above on 24 January 1750.

Contributed by L. W. Jenkins

The Voyage of the Kanrin Maru, *1860:*
an Episode in American Naval Diplomacy

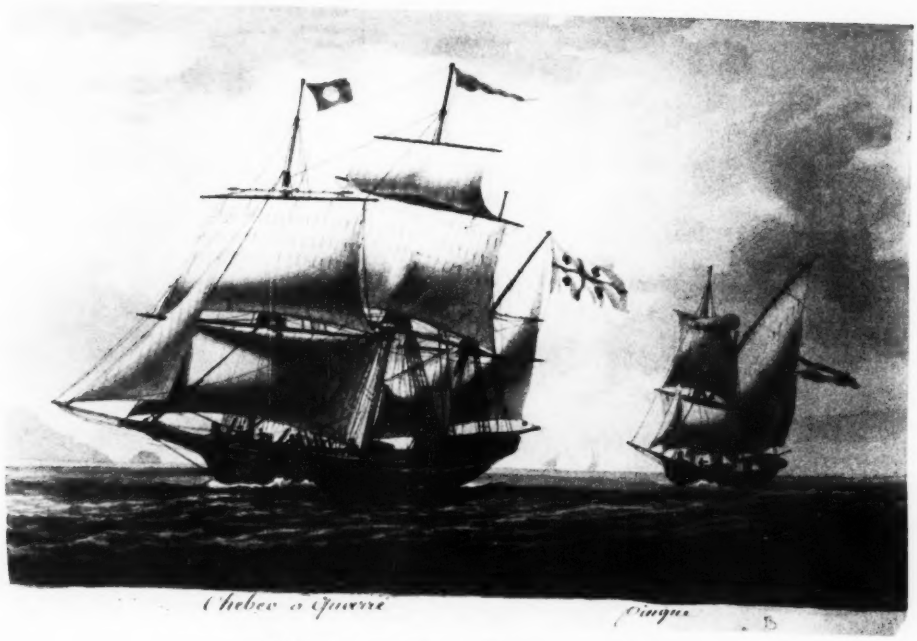
BY GEORGE M. BROOKE, JR.

THE dramatic reception in the United States of Japan's first Western mission is a familiar story. But the fact that the Imperial Government sent a warship of its own to San Francisco at the same time, ostensibly to act as an advance agent for the mission, is known to few people. Nor is it realized that the success of the Japanese warship in crossing the Pacific was due in large part to the presence on board of an American naval officer and a handful of American seamen.

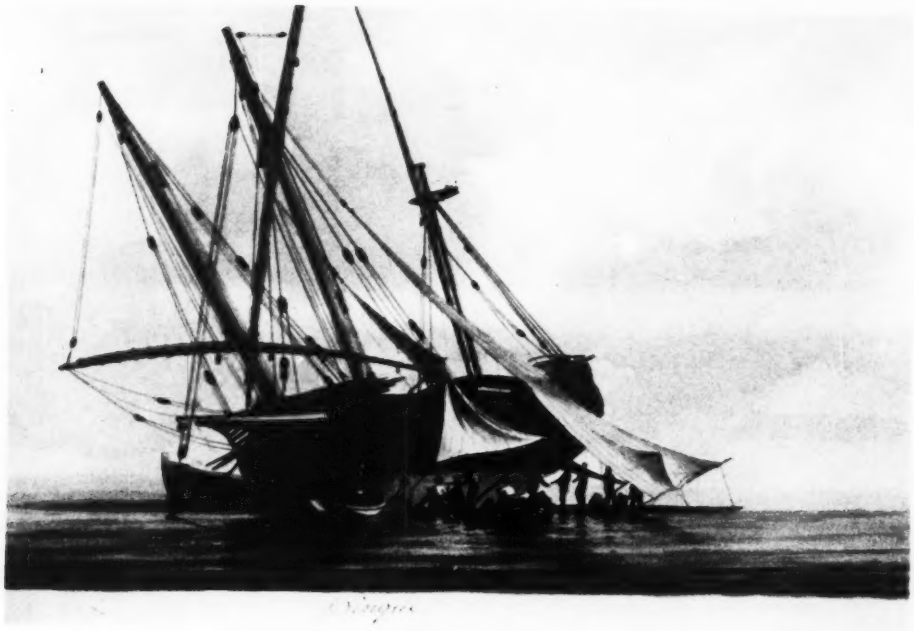
The presence of the Americans aboard the vessel was the result of an accident. In 1858 Secretary of the Navy Isaac Toucey had sent out a surveying expedition under the command of Lieutenant John Mercer Brooke to fix precisely by observation and survey the positions of prominent points on the coast of Japan.[1] In August 1859, the surveying vessel while in discharge of its duties was wrecked on the coast of Japan, and Brooke and his small crew were stranded. There was nothing for them to do but wait until passage home could be secured on one of the vessels of the United States East India Squadron based at Hong Kong. The squadron was under the command of Commodore Josiah Tattnall, who two months earlier had gone to the rescue of British warships in the Pei Ho River on the grounds that 'blood is thicker than water.' Meanwhile, the Americans resided at the small fishing village of Yokohama, near the treaty port of Kanagawa.

These were momentous days in Japan when the tension between the foreign and anti-foreign elements was crackling with hate and fear. There were a number of ugly incidents involving foreigners, and more than one foreigner was killed by hostile natives. For many weeks while Tattnall cruised in the China Seas, Brooke and his executive were the only American naval officers in Japan. During this period Brooke kept in touch with Townsend Harris, American consul general, and gave ad-

1 Toucey to Brooke, 24 May 1858, Confidential Letters Sent (Letter Book), Naval Records Collection of the Office of Naval Records and Library, National Archives.

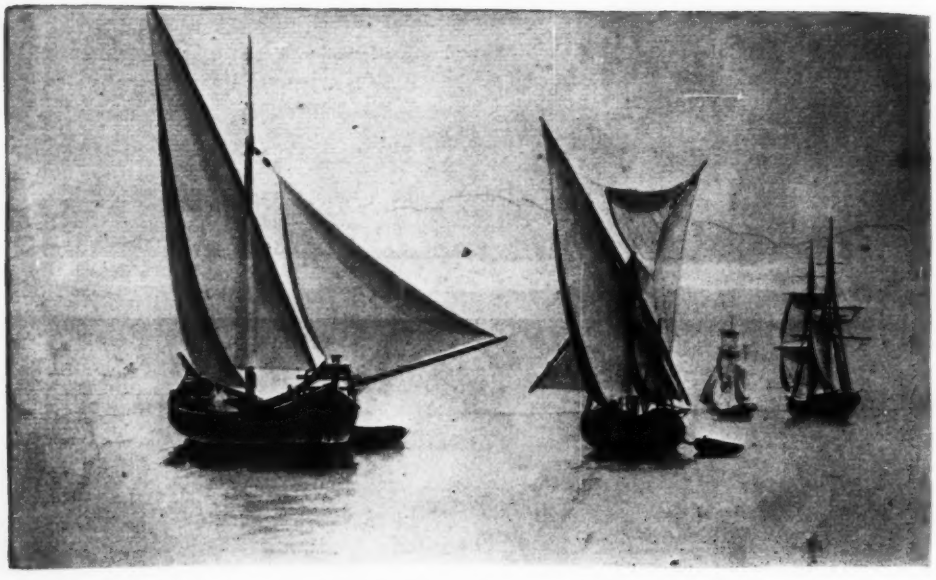


Chebec a quarré. Pinque. 1816.



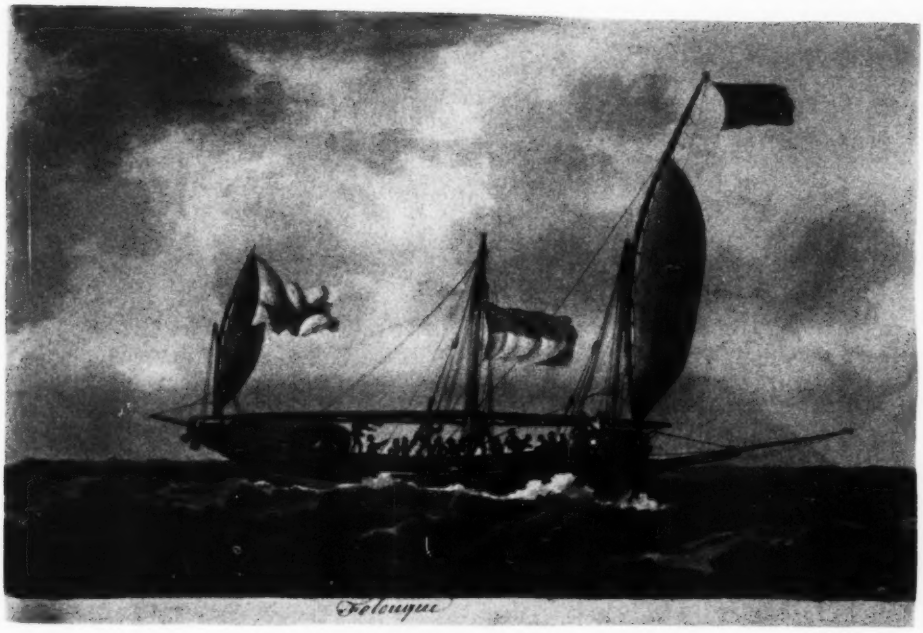
Pinque. 1816.

Lateen rigged fishermen. 1826.

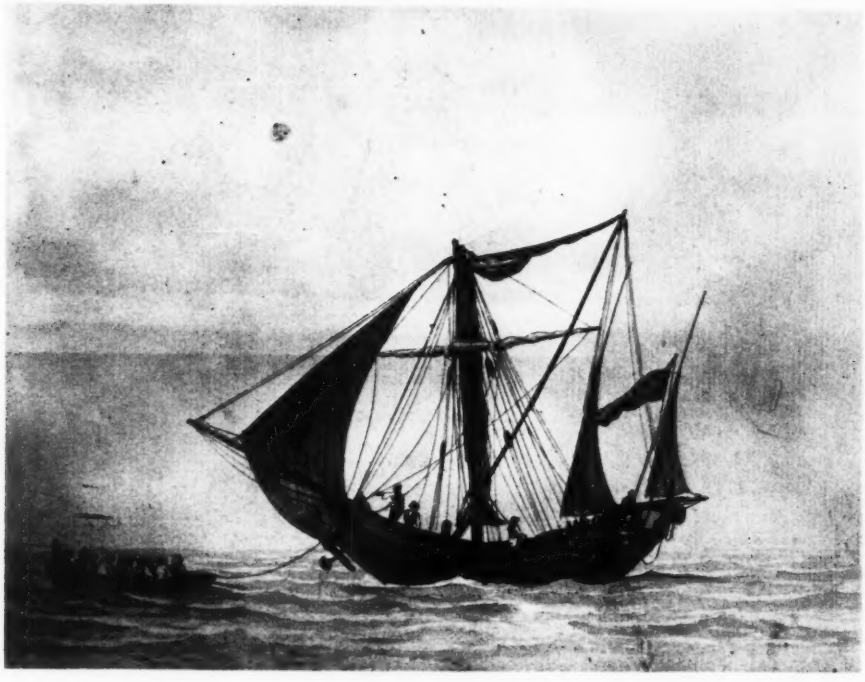


Mediterranean fisherman. 1813.

PLATE XVIII



Felouque. 1816.

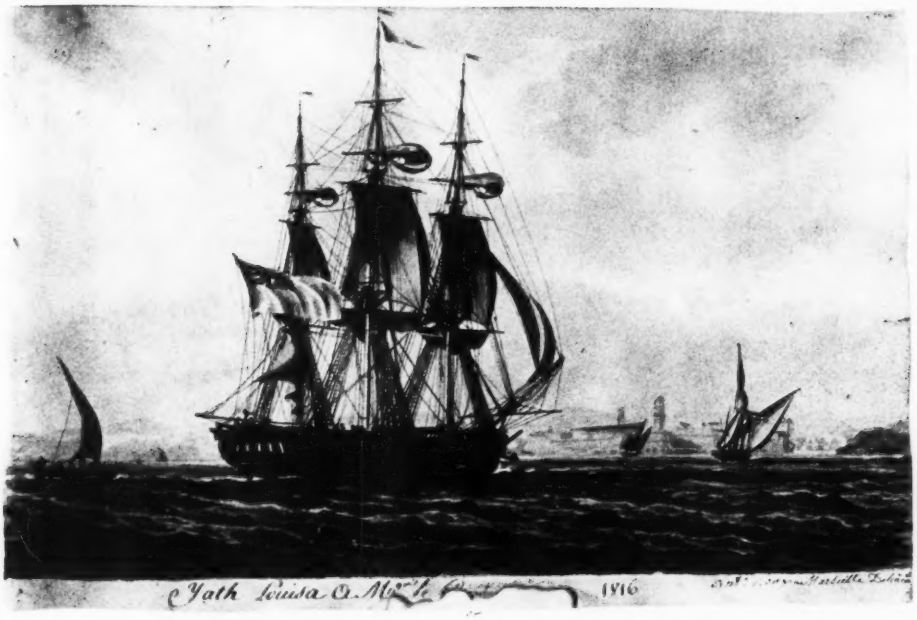


Towing in a calm. 1801.

Lumber cargo. 1820.

Mediterranean sprit rig. 1826.

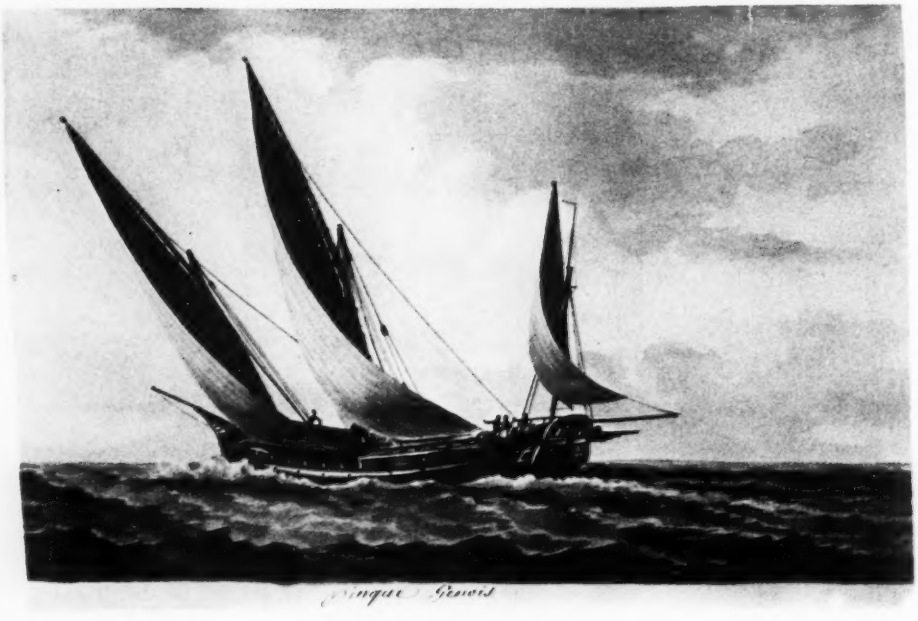
PLATE XX



Yath Louisa a M? le ?? 1816 Ant^e Roux a Marseille. Delineat.

Small boat. 1823.

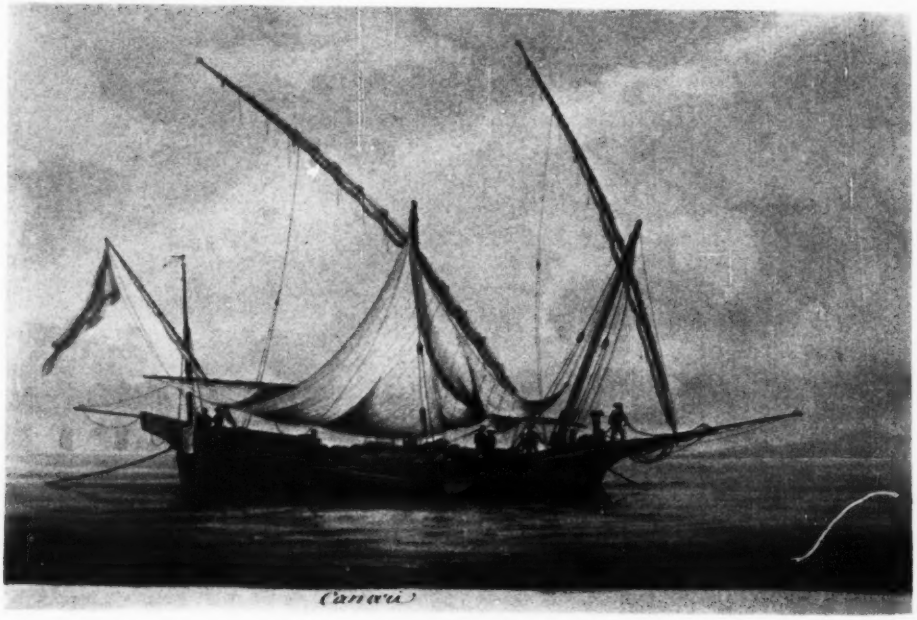
Chebec a Latin Savoyard. 1816.



Pinque Genois. 1816.

PLATE XXII

Canari Catalan. Polacre. 1816.



Canari. 1816.

Fishermen on the beach. 1823.

Allege d'Arles chargé de fourrage. 1816.

vice to the Japanese officials who were laying plans for Japan's first mission to the West.

This relationship with the Japanese began in October when Brooke conferred with the new governor of Yokohama, Shimmei Buzen no Kami, who had been appointed first ambassador of the proposed mission. It had been tentatively arranged that the Japanese diplomats should sail for the United States in *Powhatan*, Tattnall's flagship, on 22 February 1860. The return to the United States of Brooke and part of his crew in the Japanese corvette *Kanrin Maru* grew out of these conferences, for once the Japanese had resolved to send a mission to America, they felt it necessary to dispatch a warship of their own across the Pacific.[2] Recalling this decision a Japanese leader wrote that it was 'an enterprise never before attempted since the foundations of the empire.'[3] It was a question of face, a matter of transcendent importance to Orientals. If an American warship carried the Japanese good will mission to the United States, might not the Western 'barbarians' infer that the Japanese were incapable of navigating the ocean independently? After all, for two hundred years it had been against the law of the Empire to build ocean-going vessels in Japan. But the Japanese were not entirely ignorant of Western inventions and ideas; information had seeped in through the Dutch at Nagasaki before Perry's epic visit. Moreover, ambitious Japanese had studied navigation and worked with machinery, and the government had purchased steamers from the Dutch and had organized the nucleus of a navy.[4]

But could the Japanese, who were so pitifully short on experience, actually navigate the Pacific? There was much room for doubt. That opened the door to Brooke. If he were to sail on the Japanese ship as an adviser, and were some of his crew from the wrecked surveying vessel to accompany him, the probability of a successful crossing would be immeasurably increased. Brooke discussed the matter with E. M. Dorr, the American consul at Kanagawa, who took it up with Townsend Harris.[5] Harris was 'much pleased' with Brooke's proposal and in turn canvassed the subject with the Japanese government. Though personally Harris

[2] This was the Japanese' own idea. An undated memorandum in the Brooke Papers states: 'The sending of the Candinmarro originated with the Japanese themselves and may be regarded as evidence of friendly feeling frankly shown.' From internal evidence it appears that this is a copy of a press release prepared by Brooke when *Kanrin Maru* arrived at San Francisco.

[3] *The Autobiography of Fukuzawa Yukichi*. Translated by Eiichi Kiyooka. Third and Revised Editions (Tokyo: The Hokuseido Press, 1947), p. 112. (Hereinafter cited as *Autobiography of Fukuzawa*.)

[4] According to Fukuzawa, the Japanese had been studying navigation and steam under the Dutch at Nagasaki since 1855. He asserted that by 1859 'their skill and practice had made them able to venture.' *Autobiography of Fukuzawa*, p. 112.

[5] Dorr to Brooke, 3 January 1860, Brooke Papers in the author's possession. (Hereinafter cited as Brooke Papers.)

favored Brooke's appointment as adviser, he informed the Japanese that the selection of the American officer would rest with Tattnall.

When *Powhatan* arrived from Hong Kong, Brooke called immediately on Tattnall. 'I mentioned the subject of the Japanese Steamer,' Brooke recorded, 'and left him to think it over.'[6] Two days later, while Harris and Tattnall were conferring with Dorr at the American consulate, Brooke called. Harris mentioned that he had spoken unofficially to the Japanese of Brooke's willingness to travel on the Japanese ship, but he had not pushed the subject as 'it was a delicate matter.'[7] The Americans agreed that Tattnall should recommend to the Japanese that they select their best screw steamer and send her to Yokohama to be overhauled by the mechanics of *Powhatan*.[8] Though the Americans would form but a skeleton crew, Brooke was confident that they would be able to manage the ship, even without the help of the Japanese seamen.

The Japanese government soon requested that Tattnall assign Brooke to their vessel to assist in the navigation, explaining that they had known Brooke 'a long time.'[9] Tattnall promptly assured the Japanese that Brooke would be given the assignment, and he ordered that officer, a veteran of twenty years' service, to ready himself for the voyage.

When, on 4 February, *Kanrin Maru* dropped anchor off Kanagawa, Brooke dispatched a final message to Tattnall, stating his intention of meeting *Powhatan* at San Francisco.[10] To assist him in his work Brooke took aboard *Kanrin Maru* Edward Kern, the draftsman of the surveying expedition, and nine of the more reliable members of his erstwhile crew. Three of them had been hired by Brooke in Washington for their

[6] Brooke's Yokohama Journal, 12 January 1860, Brooke Papers.

[7] Ibid., 14 January 1860. In his memoirs Fukuzawa wrote that 'every member of the crew [of the *Kanrin Maru*] was determined to take the ship across unassisted by a foreigner.' Consequently, when the Japanese government agreed tentatively that Brooke and some of his crew should travel on *Kanrin Maru*, the staff of the ship 'protested strongly, the reason being that if the American navigators went along, the Japanese staff would feel an implied slur on their own independent ability to sail. This opposition grew out of the sense of honor for themselves and for their country, so the Shogunate officials were much concerned for a while.' *Autobiography of Fukuzawa*, pp. 113-114. Fukuzawa claimed that the only reason Brooke and his stranded crew were interested in the steamer was as a means of transportation to the United States. The claim is not valid for Brooke had previously been offered passage to the United States for himself and his crew on *Powhatan* by both Flag Officer Tattnall and Captain George Pearson, commanding *Powhatan*. Brooke at the time wrote, 'I am not anxious to go in the Japanese Steamer, but I ought to offer my services on this occasion.' Brooke's Yokohama Journal, 13 January 1860, Brooke Papers.

[8] Brooke to his wife, 14 January 1859 [1860], Brooke Papers.

[9] Brooke to his wife, 19 January 1860, Brooke Papers.

[10] Brooke to Tattnall, 5 February 1860, Jefferson Davis Papers, Flowers Collection, Duke University. There are several accounts of the first Japanese mission to the United States which throw sidelights on the voyage of *Kanrin Maru*. See Allan B. Cole, 'Japan's First Embassy to the United States, 1860,' *The Pacific Northwest Quarterly*, XXXII (April 1941), 131-166; Chitoshi Yanaga, 'The First Japanese Embassy to the United States,' *The Pacific Historical Review*, IX (June 1940), 113-138; Patterson DuBois, 'The Great Japanese Embassy of 1860: A Forgotten Chapter in the History of International Amity and Commerce,' *Proceedings of the American Philosophical Society*, XLIX (July 1910), 243-266.

technical competence at the inception of the surveying expedition, and they had fully justified their choice in subsequent work. There were about one hundred Japanese aboard *Kanrin Maru*.[11] The ranking Japanese was Kimura Settsuno-kami, whom Brooke described as the 'Commander in Chief of the Japanese Naval Forces.'[12] A Japanese contemporary, however, defined Kimura's position as Secretary of Naval Affairs.[13] The latter designation seems the more nearly correct, for Brooke noted in his journal that Kimura ranked 'with the Governors of Imperial Cities' and was not a seaman. He is often referred to as Lord Kimura. Of him Brooke wrote: 'He is very quiet of rather full habit, has a pleasant expression of countenance, very tenacious of position and old custom etc.'[14] The Japanese commander of the vessel was Katsu Rintaro, who, Brooke heard, was 'the very best man in the Japanese service.'[15] To Brooke, Katsu appeared 'very shrewd quick and intelligent,' with a 'sharp penetrating eye.' Later, upon his return to Japan, Captain Katsu held high posts in the government. In 1873, under the Meiji restoration, he was appointed Minister of the Navy, and for a time he served as a privy counselor. The most important Japanese on the ship from a practical viewpoint was Manjiro Nakahama, the interpreter, who had led a most interesting life.[16] Shipwrecked at fourteen in a typhoon off Japan, Manjiro was picked up by an American whaler from Fairhaven, Massachusetts, and subsequently taken to New England. Later, shipping in the whaler *Franklin*, he learned something of navigation before joining the gold rush to California. Manjiro eventually made his way back to Japan where his talents and training were utilized by the Japanese govern-

[11] The exact number is not clear. Masakiyo Yanagawa who traveled on *Powhatan* gives the names of the twenty-three most important Japanese and states that there were ninety-three other Japanese and eleven Americans; the latter figure is correct and tallies with Brooke's figure. That would make a grand total of 125. Masakiyo Kanesburo Yanagawa, *The First Japanese Mission to America (1860). Being a Diary Kept by a Member of the Embassy*. Edited by Masatoshi Gensen Mori. Translated by Junichi Fukuyama and Roderick H. Jackson (Kobe, Japan: J. L. Thompson & Co. (Retail), Ltd., 1937), p. 84. (Hereinafter cited as Yanagawa, *The First Japanese Mission*.) Fukuzawa lists seventeen important Japanese and states that there were ninety-six Japanese in all—'a larger number than usual for the ship.' *Autobiography of Fukuzawa*, p. 113. Fukuzawa also states, incorrectly, that there were four or five Americans on board. This would make a grand total of 101. Yanagawa's figures are the more reliable even though he did not travel on the Japanese steamer, for his statement is made in the journal he kept at the time. This journal of the first Japanese mission is regarded as the most complete of the five journals extant. Fukuzawa's figures are given in his autobiography written many years later. Moreover, Fukuzawa had a subordinate position on the voyage. Unfortunately Brooke's journals make no reference to the total number of Japanese.

[12] Brooke to Toucey, 25 March 1860 (copy), Brooke Papers.

[13] Yanagawa, *The First Japanese Mission*, p. 84.

[14] Brooke's *Kanrin Maru* Journal, n.d., Brooke Papers.

[15] Brooke to his wife, 19 January 1860, Brooke Papers.

[16] See Hisakazu Kaneko, *Manjiro, the Man who Discovered America* (Boston: Houghton, Mifflin Company, 1956). (Hereinafter cited as Kaneko, *Manjiro*.) Kaneko gives Manjiro's name as Manjiro Nakahama. Allan Cole and Yanaga give the name as Nakahama Manjiro, whereas Yanagawa gives it as Nakamura Manjiro.

ment.[17] Physically, the interpreter was 'a short broad shouldered compactly built man with face corresponding rather broad but full of intelligence expression determined lips full shows his teeth.'[18] He was 'a fine fellow indeed.' The man who in subsequent Japanese history played the most important role of all those aboard *Kanrin Maru* was Fukuzawa Yukichi. During the eastward crossing this future leader of education and journalism was listed merely as one of the Lord Kimura's five retainers. In the early days of the Meiji restoration Fukuzawa 'became the greatest leader in education and outstanding proponent of Westernization.'[19] Besides the men specifically mentioned above, *Kanrin Maru* carried junior officers, instructors, navigators, engineers, doctors, a purser and his assistant, stokers, retainers, and a full complement of sailors.[20]

Kanrin Maru, mounting ten guns, was a bark-rigged screw steamer of 292 tons built by the Dutch. She had been used between Nagasaki and Yedo, usually under steam, so the crew was 'not accustomed to handling sails in heavy weather.'[21] A few of the Japanese seamen had served on Dutch warships and were competent; as a whole, however, the engineers were far more experienced than the seamen. But having an auxiliary engine of only one hundred horsepower and carrying but six days' supply of coal, *Kanrin Maru* was primarily a sailing vessel. When Brooke first inspected her he found her 'in good order' and described her as 'an excellent vessel, less than three years old, her rigging new, the captain very intelligent.' The name of the vessel as Brooke spelled it originally was *Candemar,* which means the ship 'which the Tycoon visits.' After consulting with Manjiro, Brooke concluded that 'Candinmarru' approached more nearly the Japanese sound; *Kanrin Maru* is the usual modern spelling.[22]

On 7 February 1860, *Kanrin Maru* ran out her anchor off Uraga, where she spent two days making final preparations for sea. As it was soon

[17] During the cruise of *Kanrin Maru* Brooke recorded a detailed account of Manjiro's life. Brooke's *Kanrin Maru* Journal, 19, 20, and 25 February 1860. See also Kaneko, *Manjiro;* Brooke to Toucey, 25 March 1860 (copy), Brooke Papers; Inazo Nitobe, *The Intercourse between the United States and Japan* (Baltimore: The Johns Hopkins Press, 1891); Arthur Walworth, *Black Ships off Japan: The Story of Commodore Perry's Expedition* (New York: Alfred A. Knopf, 1946).

[18] Brooke's *Kanrin Maru* Journal, n.d., Brooke Papers.

[19] Chitoshi Yanaga, 'The First Japanese Embassy to the United States,' *The Pacific Historical Review,* IX (June 1940), p. 122. Fukuzawa published in 1867 the influential *Western Things and Affairs,* 'the first book on Western ideas, institutions, and civilization ever to be published by a Japanese who had actually studied and observed them in Europe and America.'

[20] The names of the more important officials are given in *Autobiography of Fukuzawa,* p. 113; Yanagawa, *The First Japanese Mission,* p. 84. The lists show differences in spelling and designations of positions. In his *Kanrin Maru* Journal Brooke gives the physical characteristics and chief traits of seven of the principal officials.

[21] Brooke to Toucey, 25 March 1860 (copy), Brooke Papers.

[22] See *Autobiography of Fukuzawa;* Yanagawa, *The First Japanese Mission;* Allan B. Cole, 'Japans First Embassy to the United States, 1860,' *The Pacific Northwest Quarterly,* XXXII (April 1941), 131-166.

apparent that the Japanese were incompletely trained, the Americans instructed them in the use of small arms and secured one of the long guns. The prospects for coöperation with Captain Katsu and Lord Kimura, whom Brooke called commodore, were promising, though the captain was 'somewhat unwell.' At this stage of the cruise both officers impressed Brooke as being 'very agreeable.'

The cooking arrangements on the steamer were novel, two high kettles for boiling rice having been substituted for the original galley from Holland. The Americans used braziers to cook their food when the weather permitted; at other times they were forced to subsist on a Japanese diet. At the start, Kern and Brooke ate raw fish and seaweed with Lord Kimura and Captain Katsu. On the cruise the Japanese cooked rice continuously and ate day and night. The officers enjoyed their midnight snack, especially, when they hauled their mats and braziers on deck and ate fish, rice, and confections washed down with gulps of hot tea.

As unusual as the cooking, was the clothing. The Japanese wore no uniforms, but rather a conglomeration of Japanese and European clothing; the executive officer, however, perhaps as a badge of authority, did wear a breastplate. The Japanese were protected with good oiled coats and mittens.

At Uraga Brooke worked closely with Manjiro and was amazed at the speed with which the interpreter absorbed instruction. For instance, Manjiro understood almost immediately the principle of compensation as applied to chronometers. 'I am astonished at the intelligence of these people,' wrote Brooke.[23] Manjiro also quickly comprehended 'the object of making observations of wet and dry thermometers.' After two days on *Kanrin Maru*, Brooke was convinced that Manjiro had 'had more to do with the opening of Japan than any other man living.'[24]

Early in the afternoon of 10 February 1860, *Kanrin Maru* weighed anchor, and threading her way past the junks in the harbor headed for the open sea. She was getting away two days ahead of *Powhatan*, but Brooke had hoped for a week's head start to be sure of beating the frigate.[25] Computing the distance by the great circle from Cape King to San Francisco to be 4,476 miles, Brooke determined to project the great circle on the chart and follow that course as closely as possible, unless the cold weather in northern latitudes interfered. He calculated the passage would require a minimum of thirty days.

[23] Brooke's Yokohama Journal, 8 February 1860, Brooke Papers.

[24] Ibid., 9 February 1860.

[25] *Powhatan*, which had been to Japan with Perry, was a far larger ship than *Kanrin Maru*. She was a first-class steam frigate of 2,415 tons. Launched at the Gosport Navy Yard in 1855 and mounting eleven guns, *Powhatan* was considered one of the best ships in the navy. She carried a crew of four hundred.

Three days after leaving Uraga *Kanrin Maru* encountered head winds of gale force and heavy seas. So it would be, much of the way! As only three days' supply of coal remained, it was necessary to conserve fuel and to depend, henceforth, on the sails. The commodore and captain had been sick since leaving port, consequently, the responsibility of running the ship devolved on Brooke.

Brooke's journal entry for 14 February gives an indication of the chaotic conditions aboard the Japanese steamer during the early part of the voyage:

> the Japanese have broken the Cabin sky light all to pieces by putting their feet on the glass so we are dependent on the light of a bulls eye.
>
> at 10 heading course E. N. E. I cannot put sail on the vessel as the Japanese are not competent to manage it. The officers are very ignorant. . . .
>
> The helmsmen do not know how to steer by the wind. Weather braces & bowline the[y] dont attend to. The weather is excessively disagreeable. No chance of an observation.
>
> I had a fall. the decks are very slippery, no sand onboard. This is a rough beginning. . . . lightning but no thunder.

In the same general area *Powhatan* was also finding the going rough, and Tattnall is reported to have said 'never in all his twenty-eight years' experience of the sea, had he ever encountered such a tempest as that which we have just had.'[26]

Life was never dull on *Kanrin Maru* as she clawed her way across the white-flecked North Pacific in the dead of winter. The unexpected was the rule. Early in the cruise, for example, Kern complained of a heavy Japanese box that was banging around the cabin. 'We supposed it contained Japanese mess stores,' wrote Brooke, but 'to our surprise [we] found it full of percussion caps enough to have blown the cabin up. about 40,000. [.]'[27] This same cold and rainy night the galley caught fire and, adding to the confusion, the Japanese threatened to hang Manjiro from the yardarm when he insisted that they go aloft. Brooke was equal to a crisis of that kind. 'I told him [Manjiro] that in case of any attempt to put that threat into execution to call upon me. that in case of mutiny upon the part of the Japanese sailors if the Capt. would give authority I would hang them immediately.'[28]

The stormy weather of the North Pacific did not moderate. The seas rose higher and higher as frequent and violent squalls lashed the ship

[26] 'Journal of Muragaki Awaji-no-Kami, during his journey to and stay in the U. S. A., 1860,' 14 February 1860, Roland S. Morris Papers, Manuscripts Division, Library of Congress. (Hereinafter cited as Journal of Muragaki.)

[27] Brooke's *Kanrin Maru* Journal, 15 February 1860, Brooke Papers.

[28] Ibid.

with hail and driving rain. The Japanese, whose sailing had been confined to coastal waters, got quite a scare. Fukuzawa in describing his impressions wrote 'that whenever the ship keeled over on her side, I could look up through the skylight from below and see the tops of great waves in the distance.'[29] Such weather was hard on Captain Katsu, who was still sick. After fifteen days at sea, however, he was able to sit up and eat raw eggs, soup, and wine in an effort to regain his strength. 'He is the most quiet man I ever saw,' Brooke noted. 'I never hear his voice, the officers seldom go near him although he is very highly esteemed by them.'[30] As for Lord Kimura, he stayed in his cabin all the time, except for an occasional stroll on deck. Day after day Brooke's journal mentions that the commodore and the captain were confined to their rooms. In later years Fukuzawa remembered that 'Katsu proved a very poor sailor—he did not leave his cabin during the whole journey across.'[31]

Ashore the Japanese were noted for their courtesy, obedience to orders, and good discipline. These qualities deserted them when they put out over blue water. Brooke described the metamorphosis as follows:

> There does not appear to be any such thing as order or discipline onboard. . . . the Japanese must have their little charcoal fires below their hot tea and pipes of tobacco. the Saki is not very carefully kept from them. Add to this that the orders are all given in dutch and that very few of the seamen understand that language and one may form some idea of the manner in which duty is carried on. . . . the officers leave the doors open which slam about [.] leave their cups dishes & kettles on the deck to roll and slide about so that there is nothing but confusion.[32]

But, of course, this was the Japanese' first sailing cruise. Meanwhile, the apathy and indifference of the Japanese threw the bulk of the work on the Americans who continued to steer and handle the ship. 'The Japanese seem to rely entirely upon us.' Brooke complained. Clearly, until the Japanese had gained experience, it behooved Brooke to move cautiously through the heavy seas and to make a minimum of sail. The Japanese could not set sails without assistance, and when they tried to steer they did such a poor job that the advantage of using the currents was lost. During rough weather it was necessary for the Americans to take the helm and shape the course.[33]

The Japanese officers, like the sailors, were woefully ignorant of seamanship, but they did display some skill in navigation. They rated the chronometers before leaving Yedo and at sea demonstrated a familiarity

[29] *Autobiography of Fukuzawa*, pp. 116-117.
[30] Brooke's *Kanrin Maru* Journal, 25 February 1860, Brooke Papers.
[31] *Autobiography of Fukuzawa*, p. 119.
[32] Brooke's *Kanrin Maru* Journal, 16 February 1860, Brooke Papers.
[33] Brooke to Toucey, 25 March 1860 (copy), Brooke Papers.

with lunar observations. Manjiro continued to show a real facility with the instruments and largely took over the simple observations. Ono Tomogoro, one of the officers, won praise as an excellent navigator. Brooke described him as being 'very intellectual' and having a large head with a powder burn on the left side of his face.

Standing watch was another cause of trouble. The Japanese did not stand watch early in the cruise, and for the first three weeks the American enlisted men were in watch and watch like officers, even when scudding before a high sea. Brooke was moved to comment that 'It would be amusing if it were not such a serious matter to see how completely they [the Japanese] abandon the ship to our two or three men of the watch.'[34] It was not until nine days after leaving Japan and some terrific gales had been weathered that the Japanese were even divided into watches.[35] But even the formal organization of watches turned out to be but a partial solution. With vexation Brooke commented that

> an unexpected difficulty occurred, of 6 officers of the grade of Lieutenant some are totally ignorant of their profession. the Commo: is unwilling to give those who are competent watches as they are not of as high shore rank as some who are incompetent the consequence is that he prefers to leave things as they are, no stations no watches etc. The Commo: knows nothing whatever of seamanship, the old fellow knows that I can take care of the vessel and so there the matter rests. I shall urge the point however. . . .
>
> Manjiro is intensely disgusted he is forced to yield to the Commo: But he has convinced the officers of the propriety of putting them in watches. I asked him what the Commo: would do if I took my men off watch and refused to work the vessel. Let her go to the bottom [he replied].[36]

Three weeks of such confusion inevitably precipitated a showdown. Brooke demanded and at long last received some real help from the Japanese. One day, the wind being ahead, Brooke proposed 'to show the officers how to tack ship.' But the officers were 'too lazy to come on deck' and made various feeble excuses. 'I therefore,' wrote Brooke, 'called all my men and sent them below with orders to do nothing without my consent.' Brooke then informed Captain Katsu that he would not continue to operate the vessel unless the Japanese officers gave assistance. This threat accomplished Brooke's purpose, for Katsu gave his officers a lecture and put them under Brooke's command.[37]

Under the new regime the Japanese did improve, and by the time the voyage was over Brooke was willing to predict they would make 'excellent

[34] Brooke's *Kanrin Maru* Journal, 16 February 1860, Brooke Papers.
[35] Ibid., 19 February 1860.
[36] Ibid., 20 February 1860.
[37] Ibid., 3 March 1860.

sea officers,' fully competent to manage their own vessel. Certainly the small American crew deserves high praise for its part in this transformation. No effort was spared to give the Japanese much needed practical instruction in navigation and seamanship, and once Brooke deliberately guided *Kanrin Maru* into a circular storm and out again in order to demonstrate that such storms were understood by scientists.[38] Truly, Brooke did not exaggerate when he wrote at the conclusion of the voyage that he had navigated the Japanese steamer to San Francisco with the aid of nine American sailors.

As *Kanrin Maru* approached the United States spirits rose and the Japanese became quite gay; even Lord Kimura began to show signs of life. The ship arrived at San Francisco on 17 March, thirty-seven days from Uraga, having traveled all but the first three days under sail. Yet, to Brooke's amazement and the Japanese' delight, *Kanrin Maru* had beaten *Powhatan*. Brooke had been sure, owing to the lack of skill on the part of the Japanese, that he would trail Tattnall by eight or nine days.[39] He did not know, of course, that a little more than half way across the Pacific *Powhatan* had left the direct route to San Francisco, and taking advantage of a good breeze had run south to the Hawaiian Islands to pick up some coal.[40] *Powhatan* did not arrive at San Francisco until 29 March, twelve days after *Kanrin Maru*.[41] Meanwhile, the men of the latter vessel were able to play in a grand manner the role of advance agents, and to prepare San Francisco for the arrival of the first Japanese embassy to the West. With their strange customs and dress the Japanese evoked much enthusiasm and curiosity among the natives of the bay city.

Brooke reported the arrival of *Kanrin Maru* to Captain Robert B. Cunningham, commandant of the navy yard at Mare Island, and at the request of Lord Kimura informed him that it was the Japanese' desire to have the steamer refitted before the return trip to Japan.[42] The vessel had sustained considerable damage from her incessant battering by high winds and heavy seas, and it was calculated that it would take several weeks to put her in readiness for the voyage home. The commandant promptly and graciously opened the facilities of the new yard to the visitors.

The assistance of Brooke and the other Americans in taking *Kanrin*

38 Katherine Corbin Brooke Diary, 9 September 1874, Brooke Papers.

39 *Powhatan* had left Yedo 10 February on schedule, but was delayed three days at Yokohama. The American vessel steamed past Uraga three days after *Kanrin Maru*'s departure.

40 Journal of Muragaki, 28 February 1860. *Powhatan* spent nearly two weeks in the Hawaiian Islands, arriving 5 March and leaving 18 March. The frigate having used steam much of the way, her coal supply ran low because of unexpected head winds.

41 Journal of Muragaki, 29 March 1860.

42 Brooke to Cunningham, 19 March 1860 (copy), Brooke Papers.

Maru across the Pacific was deeply appreciated by the Japanese government. Brooke received a letter from Captain Katsu stating: 'You know that we never send our man of war to the Foreign Country. This is first time, we ever clossed, 3 thousand miles, because for you on board.'[43] The Japanese offered Brooke a large sum of money which he did not as a naval officer feel free to accept.[44] But the Japanese were determined that Brooke should receive something, and when he left *Kanrin Maru* to return to Washington the officers of the warship gave him 'many souvenirs, chiefly their uniforms—if the old style embroidered silk garments could be so called—with other articles of dress.'[45]

In view of the importance of the early publication of charts based on his surveys, Brooke desired to depart for Washington as soon as the Japanese could dispense with his services. Consequently, on 5 April, seven days after the arrival of *Powhatan,* Brooke and three members of his original crew took passage for Panama. The rest of the Americans were discharged in San Francisco.

On 8 May 1860, the repair work being completed, the corvette set out on her return voyage to Japan via the Hawaiian Islands, without benefit of foreign advisers.[46] The safe arrival of *Kanrin Maru* in Japan on 1 July 1860, was ample proof that in seamanship and navigation the Japanese had learned their lessons well.

[43] Katsu to Brooke (translation), n.d., Brooke Papers.

[44] Brooke to Admiral Thornton Jenkins, 15 September 1881 (copy), Brooke Papers. Brooke told his second wife, fourteen years after the voyage, that when *Kanrin Maru* reached San Francisco Manjiro 'opened the large chest of gold and told Captain B[rooke] to help himself, to take what he wanted as a remuneration for his services.' Brooke of course declined the offer. Katherine Corbin Brooke Diary, 9 September 1874, Brooke Papers. In a speech before the America-Japan Society in Tokyo on 7 May 1935, Prince Iyesato, President of the Society, stated that 'as an evidence of their appreciation of this kind and efficient service, the Japanese admiral requested him [Brooke] to help himself to any amount he chose to take out of an iron chest which he was informed contained $80,000, an invitation which he was, of course, compelled to decline but the sincerity of the admiral's offer was beyond question.' *The Japan Advertiser,* 9 May 1935.

[45] Brooke to Joseph Heco, 20 January 1896 (copy), Brooke Papers.

[46] Journal of Muragaki, 28 June 1860.

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John E. Ward and the Chinese Coolie Trade

BY M. F. FARLEY

THE interests of the United States in China in the first sixty years of the nineteenth century was mainly economic. It was left to the more warlike ambitions of the English and French to force the Chinese to sign favorable commercial treaties. Taking advantage of the superiority of the English and French over the Chinese in 1858, the United States signed the Treaty of Tientsin. It was approved and ratified by the Senate and President Buchanan on 21 December 1858. To John E. Ward of Georgia, now minister plenipotentiary and envoy extraordinary to China, was given the task of exchanging ratifications of the treaty.

Ward was born on 20 October 1814 at Sunbury, Liberty County, Georgia. He attended Amherst and law lectures at Harvard, and was admitted to the Georgia bar by a special act of the Georgia legislature in 1835. In 1854 he was lieutenant-governor of Georgia and some time later mayor of Savannah. The year 1856 found him the presiding officer of the Democratic convention at Cincinnati, which nominated Buchanan for the Presidency.[1]

Although having no formal diplomatic experience, Buchanan appointed Ward to the post of minister to China. He arrived in Hong Kong in May 1859, having been instructed by Washington to proceed to Peking and exchange ratification of the treaty.[2]

Upon reaching Hong Kong Ward found both the English and French envoys ready to leave on the same mission. Together they journeyed to the mouth of the Peiho River. There they found barriers had been placed across the mouth of the river to bar the entrance of foreign vessels. Thus it became quickly apparent that Peking was not yet prepared to receive the three envoys on terms of equality. The United States was not prepared to use force in breaking down this new show of Chinese resistance, but Ward's English and French colleagues were ready to do so. So Ward stood aside while the Franco-British forces attacked the Taku forts.

1 S. F. Bemis, *American Secretaries of State and Their Diplomacy*, VI, 374. See also John W. Foster, *American Diplomacy in the Orient*, p. 245.

2 Foster, op. cit., p. 245.

After several hours of formal fighting the French and British envoys returned to Shanghai for reinforcements. Ward decided to act independently, and here he began to show his lack of diplomatic experience as well as ignorance of Chinese custom. The treaty provided that the Chinese authorities should arrange for the conveyance of the American envoy to the capital—a provision which they were glad to provide; for the manner of the first entrance of an American envoy to Peking was to them an important matter.[3]

Here the Chinese took advantage of Ward's lack of knowledge of Chinese custom. The American minister and his party rode into Peking in carts over which floated banners describing Ward as a tribute bearer from the United States. The carts were the traditional conveyances for the emissaries of tribute-bearing nations to the 'Son of Heaven.'[4] Ward and his party should have gone in sedan chairs which was the customary mode of travel for the highest officials of the Chinese government.[5]

A short time after Ward and his party of 30 arrived in the Chinese capital, he was told by the court officials that it would be necessary to 'practice the rites and ceremonies necessary' as befitting the American minister.[6] The discussion lasted two weeks and during that time Ward and his party were kept under house arrest, no one could communicate with the Americans and his abode was guarded by soldiers.[7]

The chief point of difficulty between Ward and the Chinese officials was the *kotow*. The kotow, humiliating to Westerners, were nine prostrations before the Son of Heaven. Hence the fruitless discussions went on over this all important court etiquette. Ward was adamant in not consenting to perform the kotow. The Chinese spokesman then suggested that Ward should kneel on both knees. Ward replied in the negative,[8] and he further gave a negative answer when asked to kneel on one knee.[9] In the spirit of the southern cavalier, Ward said, 'I kneel only to God and Woman.'[10] The Chinese official then replied, 'The Emperor is the same as God.'[11] But Ward was not convinced; he maintained he would respectively bow and nothing more.[12]

3 Tyler Dennett, *Americans in Eastern Asia*, p. 341.
4 Ibid.
5 W. A. P. Martin, *Cycle of Cathy*, pp. 199-200.
6 Ward to Cass, 20 August 1859. Senate Executive Document 30, 36 Cong. 1 Sess.
7 Foster, op. cit., p. 248.
8 Ibid., p. 249.
9 Ibid.
10 Ibid.
11 Ibid.
12 Ward to Cass, 20 August 1859. Senate Executive Document 30, 36 Cong. 1 Sess.

In a letter to Ward from Kweiling the 'second man in the Empire to the Emperor himself,'[13] Kweiling told Ward that since he would not agree to perform the kotow 'we are quite at a loss to understand . . . for what purpose you have come to Peking.'[14] Ward replied that his purpose was to ratify the treaty. He said it was not 'his obstinate maintenance of his own opinion' which prevented him from performing the kotow, but 'those ceremonies are so much at variance with the laws, the Constitution, and custom of our country, that a compliance with them would have received the stern rebuke of the President and been at once repudiated by him.'[15]

Thus agreement on court etiquette was impossible and the letter from President Buchanan to the Chinese Emperor had to be handed by Ward to Kweiling, the Emperor's prime minister. 'It was received by him with every mark of respect—elevating it above his eyes, he placed it upon a table, under a guard of honor, until it could be conveyed to the Emperor.'[16]

The American treaty with China was silent as to where ratification could take place. Sometime later Ward was notified that ratification would take place at the mouth of the Peiho at Pehtang.[17] Accordingly on 16 August 1859, Ward, T'and, the Chinese governor-general of the province of Chihli, and Wan-hi-uh, treasurer of the province, exchanged ratification of the Treaty of Tientsin.[18]

Ward returned to Shanghai and the latter part of 1859 we find Ward at Macao, evidently waiting to be recalled to the United States. While at Macao, Ward was busy in the work of trying to alleviate or at least trying to reduce the practice of the Chinese coolie trade.

By the terms of the Treaty of Ghent of December 1814, the United States and Great Britain mutually bound themselves to do all in their power to extinguish the African slave trade. It was at once prohibited in several South American countries when they acquired their independence. In the 1830's England entered into agreements with the French for the mutual right of search within certain seas—which most of the major powers acceded. By the terms of the Webster-Ashburton Treaty of 1842 England and the United States agreed to maintain joint squadrons off the

[13] Ibid.

[14] Kweiling to Ward, 5 August 1859. Senate Executive Document 30, 36 Cong. 1 Sess.

[15] Ibid. See also J. B. Moore, *The Works of James Buchanan*, VII, 3090. Buchanan said the 'conduct of our minister on the occasion received my entire approbation.'

[16] Ward to Cass, 20 August 1859. Senate Executive Document 30, 36 Cong. 1 Sess.

[17] Foster, op. cit., p. 249.

[18] Ratification of Treaty, 16 August 1859. Senate Executive Document 30, 36 Cong. 1 Sess. See also Foster, op. cit., p. 252.

west coast of Africa. By all these measures the slave trade, so far as it was carried on under the flags of European nations or for the supply of their colonies, ceased to exist. So it was that the more unscrupulous shipowners and masters, including the Americans, turned to a more lucrative source of profit—the transportation of Chinese coolies to North America, the West Indies, and South America.

The term coolie belonged to the tribe living near the Gulf of Cutch in Africa—but as applied to the trade, it was merely a European title for the lowest class of laborers in most Eastern countries. There seems to be no connection between the two names.[19]

There was a great demand for labor in Peru and Cuba, and to a less extent in California. In Peru the Chinese were used to work the mines, and restore to cultivation lands which had lain idle since the Conquest. In Cuba the coolies were used in the cultivation of sugar.[20] Most of the coolies came from South China and were supposed to be under contract for service for a number of years; but actually it was virtual slavery. The headquarters for this trade was the Portuguese island of Macao. Chinese in large numbers were kidnapped from their homes by procurers or 'pimps' who were native Chinese, the agents of the contractors.[21] The coolies were confined in barracoons in Macao, then when a ship arrived they were loaded into the holds and sent to the Americas.[22]

The profits were large in this traffic of Chinese laborers. They were sold to Peruvian and Cuban planters for $400 to $1,000 each. They were under contract, but at the end of their term of service they were continued in service for alleged debt, crimes, and other fictitious charges. They were treated as slaves, were lashed, beaten, and tortured. Their condition was so wretched that they often sought to relief in death.

There were many verifications as to the number arriving in Havana from reading the United States consular reports. Robertson, American consul at Havana, reported to Secretary Marcy on 4 June 1856, that the English ship *Hope* arrived with 452 Chinese aboard.[23] Other reports included the American clipper ship *Sea Witch* of New York City with 500 coolies aboard as well as the American ship *Swordfish* with 350 Chinese.[24] It has been estimated by the authorities concerned that about 100,000 Chinese were transported to Peru and about 150,000 to Cuba.[25]

19 Edger Holden, 'Coolie Trade,' *Harpers Magazine*, XXIX (June 1864), 2.

20 Foster, op. cit., p. 275.

21 Ibid., p. 246.

22 Ibid.

23 Robertson to Marcy, 16 June 1856. Senate Executive Document 99, 34 Cong. 2nd Sess.

24 Robertson to Marcy, 5 April 1856. Senate Executive Document 99, 34 Cong. 2nd Sess.

25 Foster, op. cit., p. 277.

There were many cases of disaster either to the coolies on their way to South America or of their killing of the crew and going back to China. In one such case the rebellious coolies set fire to the ship, then the captain and the crew battened down the hatches and took to the boats and left the 600 Chinese to perish miserably.[26]

Several thousands of Chinese came to California attracted by the discovery of gold and by the high wages paid to laborers. However, under American law a system of enforced labor was not permitted and as a result the coolie trade never extended to the United States.[27]

The question might be raised, what did the Chinese themselves do to stop the flow of their countrymen into involuntary servitude? Most of the sources on the subject seem to indicate that China and its officials as a rule were indifferent to this traffic and made no serious effort to put an end to the evil. Some local authorities did seek in a feeble way to repress the kidnapping—but little came of it. Actually the central government at Peking was not seriously affected by the exodus of a few hundred thousand Chinese from the swarming population in the southern provinces.[28]

In 1855 the British Parliament made it unlawful for British ships to engage in the traffic and give full power to the colonial government at Hong Kong, where the trade was first established, to take measures against it. The result of this legislation was to drive the traffic to Macao.[29]

Several American ministers to China exerted their influence against the traffic, among them John E. Ward. While staying in Macao, he used his influence in trying to stamp out the trade carried in American ships.

Gideon Nye, Jr., the American vice-consul at Macao told Ward on 28 November 1859 of several cases of American ships kidnapping unwilling coolies for 'emigration' to the United States. He stated many coolies pleaded with the ship's captain to be allowed 'to write their friends to raise the money for their ransom, but were told there was no one there to write for them.'[30] He cited other cases of coolies detained against their will who 'committed suicide with opium and others hung themselves.'[31]

One case in point bears examining and will illustrate the way in which Ward tried at least to control the traffic and cut it down to a minimum. It was the case of the American ship *Messenger* commanded by Captain Ben-

[26] Ibid., p. 276. Robertson to Marcy, 15 February 1856. Senate Executive Document 99, 34 Cong. 2nd Sess. Robertson told Marcy that in October 1855, the American ship *Waverly* had a mutiny of the 300 Chinese coolies against the crew. The log stated that the crew finally got everything under control with the killing of the 300 coolies.

[27] Ibid., p. 282.

[28] Ibid., p. 278.

[29] Ibid., p. 280.

[30] Nye to Ward, 26 November 1859. House Executive Document No. 88, 36 Cong. 1 Sess.

[31] Ibid.

jamin D. Manton. Manton wrote Ward from Whampoa on 8 January 1860, complaining of the detention of his vessel by Chinese authorities. He said that the emigrants aboard *Messenger* had been examined by the United States consul at Canton, Oliver H. Perry, as well as the Chinese authorities and that of 233 Chinese emigrants aboard 28 had changed their minds about going to the United States.[32] Another side of the picture was presented by a letter from Perry to Ward on 10 January 1860. Perry reported that Manton had ordered the American consul and the Chinese authorities off his ship when they came aboard to examine the cargo. After a heated debate Manton finally consented to examination. The Chinese insisted that the coolies should be brought to Canton—but instead Manton took them to Macao. The Chinese authorities told Manton that unless he produced the coolies at Canton the governor-general (Lau) would not give *Messenger* clearance.[33]

On 11 January Ward replied to Perry that he must coöperate with the Chinese authorities in order to prevent the 'kidnapping of coolies under the pretense of shipping as emigrants.' He must therefore withhold the papers of *Messenger* and all other like ships.[34]

Ward then issued orders to Commodore Charles Stribling of U.S.S. *Hartford* to take all precautions from allowing *Messenger* from going to sea until she was authorized to do so. Ward said Manton had 'practiced deceit and fraud' and was the aider and abettor of the kidnapping of Chinese coolies. He also told Stribling that 'unless prompt and decided measures are taken by the American authorities against such reckless and lawless men, we can not hope to preserve friendly relations with the Chinese Government.'[35]

Ward in a communication with Secretary Cass told him the ways Chinese coolies were brought to the Americas. When the coolies are examined by Chinese authorities they are 'forced to answer in the affirmative when asked if they are willing to emigrate; an answer in the negative exposes them to being severely beaten.' He added that American vessels are chartered by the 'subjects of other governments and so odious has become the trade by recent transactions that other governments have either forbidden their vessels to engage in it, or so restrained and regulated the trade as to throw it almost entirely in the hands of the Americans.'[36] He concluded by saying that Captain Manton of *Messenger* and the captains

[32] Manton to Ward, 8 January 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[33] Perry to Ward, 10 January 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[34] Ward to Perry, 11 January 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[35] Ward to Commodore Charles B. Stribling (aboard U.S.S. *Hartford*), 12 January 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[36] Ward to Cass, 24 January 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

of *Kitty Sampson*, *Governor Morton*, and *Pioneer* are all connected.[37]

In the days that followed Manton wrote many letters to Ward begging him to intercede with the Chinese authorities to let him sail. He had been detained at Whampoa for a year and his owners were growing anxious.[38]

As a result of the case of *Messenger*—early in February 1860, the Secretary of the American Legation, S. Wells Williams,[39] told of the examination of the returned *Messenger*'s coolies. He asked them were they on *Messenger* of their own accord, and had they voluntarily signed contracts, and were they willing now to go abroad? 'The questions were put to each man separately, and everyone of the 215 unhesitating replied in the negative; some of them declaring they had rather die than go in that ship.'[40] Only a few could read and the majority were between the ages of 20 and 30. They came from the lowest order of society; field laborers, boatmen, artisans, porters.[41]

Williams reported to Ward that the 'evidence was clear . . . of the cruelty practiced on board ship to compel them to sign contracts, but the punishments of violence was chiefly exercised by the crimps (native Chinese slavetrader, if you can call it that).'[42] Williams added that the contract called for a term of work of eight years as laborers at $4.00 per month.

The final disposition of *Messenger* was ended with the coolies being lodged in quarters in Canton and were later dismissed to their homes by the governor-general.[43]

In a letter to Secretary Cass the last of February, Ward described incidents of deaths of the coolies. Since October 1859, Ward related more than '1000 lives have been sacrificed.'[44] *Flora Temple* lost 850 coolies in a storm in the China Sea; *Norway* had a mutiny and 80 coolies were lost; and at Swatow 30 coolies tried to escape and were drowned.[45]

As a result of the work of Ward and other American officials, Congress in 1862 made it unlawful for American ships to transport subjects of China or any other country to any foreign port for the purpose of forced

[37] Ibid.

[38] Manton to Ward, 3 February 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[39] S. Wells Williams was an unordained missionary in China. In 1834 he took charge of the Printing Press of the American Board of Commissions for the Foreign Missions. He acted as interpreter for Commodore Perry when Perry went to Japan in 1854. In June 1855, he was appointed Secretary and interpreter of the American Legation in China. He is the author of *The Middle Kingdom*, 2 vols.

[40] S. Wells Williams to Ward, 7 February 1860, House Executive Document No. 88, 36 Cong. 1 Sess.

[41] Ibid.

[42] Ibid.

[43] Ibid.

[44] Ward to Cass, 24 February 1860. House Executive Document No. 88, 36 Cong. 1 Sess.

[45] Ibid.

labor. United States Naval officers were empowered to search and seize American vessels violating the law. It was further made the duty of American consuls to examine all emigrants on ships clearing for American ports to 'ascertain whether they were departing voluntarily.'[46]

[46] Foster, op. cit., p. 281.

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Note abstracted from a notarial record kept by Daniel Moulton of York, Maine, 1746-1784.

LICENSE TO CUT TREES FOR MASTS. On 20 October 1750, Gov. Benning Wentworth, granted a license to Daniel Emery and Simon Emery of Kittery and Elisha Hill, Ichabod Goodwin and James Plaisted of Berwick with their workmen 'to enter His Majestys Woods in the New Township above Berwick' and fell eighty white pine trees for Mark Hunking Wentworth of Portsmouth, agent for John Henniker & Son, merchants of London, under contract to supply the Royal Navy with masts, yards and bowsprits. On 27 October 1750, Mark Hunking Wentworth contracted with Daniel Emery and his associates to fell and deliver at the usual landing place in Portsmouth 56 masts, 26 to 34 inches in diameter, and 28 to 34 yards in length; 10 yards, 20 to 24 inches in diameter, and 28 to 34 yards in length; and 14 bowsprits, 29 to 36 inches in diameter and 19 to 23 yards in length, all to be 'hewed in Workmanlike manner into Sixteen Squares & to bear Proportion in all parts,' all to be sound and most of the sap to be taken out, paying therefor £18406 Old Tenor. The place where the trees were growing was about thirty miles from Portsmouth and 'by reason of several Rivers & Deep Miery Swamps & Rocky Uneven Ground' it was impossible to haul the trees to the landing place without hard frosts and a considerable depth of snow. The winter of 1750-1751 proved to be warm to an uncommon degree and there were insufficient frosts and fall of snow so that Emery and his associates were unable to fulfill their contract with Wentworth and they accordingly 'protested' the unseasonableness of the weather.

Contributed by L. W. Jenkins

Documents

Heaving the Lead Deep Sea Style

In 1825 General LaFayette was returned to France in the U. S. Frigate *Brandywine* after his triumphal visit to the United States. *Brandywine* was named in his honor commemorating the name of the town where he received his only wound of the Revolutionary War.

The following extract from the journal kept by the chaplain on board graphically depicts the operation of heaving the log in deep water:

Frigate *Brandywine*
English Channel, Oct 3, 1825

They have just been heaving the lead: in shallow water this is easily done, but at this depth, it is a more difficult operation. Men are stationed on the outside, the whole length of the ship: a rope is passed to them from the stern and so forward, each one keeping a few coils in his hand: a lead weighing about sixty pounds and well armed below with tallow, is attached to it at the bow, and when all is ready, the ship is luffed up so as nearly to lose her head-way. The officer then cries 'all ready' and is answered by the midshipman on the forecastle, 'all ready sir'—'heave' is the order: the lead is dropped, and as each sailor shakes out his coil he cries, 'watch there watch.' The quarter-master counts the fathoms at the stern, and makes report to the officer. We found ourselves in sixty fathoms.

Contributed by
Captain Edgar K. Thompson, U.S.N.

Iron & Steel Shipbuilding in Great Britain

The Early History of Iron Shipbuilding Carries us back to the Year 1820. The first Iron Ship that went to sea, was the—*Aron Manley*. Her first voyage was made in 1820, from London to France. The Ship was built by the Horsley Company of Birmingham, and put together in the River Thames. From that early date little or no progress was made. As a matter of fact there were in 1840 only 771 Steam Vessels, with an aggregate of 7,928 Tons belonging to the United Kingdom, and this was increased in 1850 to 1187 Steamships aggregating 168474 Tons. This does not include River Steamers and small Craft. The Gross Tonnage of British Steam vessels built of Iron was in 1850:—57361 Tons against 217827 Tons Built of Wood. In the Year 1860 the Two Materials had changed place, the British Steam Ships numbered a Tonnage at the Period aggregating

535·596 Tons of Iron & 150821 Tons of Wood.

In 1878 the figure stood as follows:—

1,218,824 Tons of Iron & 122282 Tons of Wood.

Steel had been in use occasionally up to this period, but, it may be assumed that with the Year 1878 a New Era was again ushered & Steel took hence the place of Iron. Until the Year *1870* the Total Tonnage of Steam vessels and *one Sailing Vessel only* of 1200 Tons built of Steel aggregated to about 27000 Tons.

Up to the period named, 1878, Steel had mainly been employed in the Construction of Steamers of Light Draught. Shipowners held and many adhere yet, to the opinion that the Gain of Greater Carrying Power, possessed by Great Britain vessels, will be confined to Cases where heavy Cargoes are regularly obtainable, & where, as in a Great many cases, the Holds are full before the vessel has attained her *Maximum* Draught, there is clearly no advantage in using Steel in preference to Iron. Meanwhile the position of Steel had been fully recognized by the Naval authorities, as well as by the Committee at Lloyds.—A general Reduction of 20 percent in the thickness of plating had been allowed as well as in the framing etc etc. The afore-expressed opinion Could only be founded on the assumption that the

Price of Steel would compare unfavorably with that of Iron. But since the descrepancy in value has been brought to a lower level the advantage of using Steel has been more of less recognised.

These are briefly the Statements made Some Time ago by an Emminent Shipbuilder in the North of England. I hope to obtain in the Course of a week further & perhaps more valuable information. In the meantime I will extract a few remarks which have probably some weight. It is held that in most cases of the vessels constructed the difference of weight has been about 2 to 3—i.e. 3 for Iron and 2 for Steel, so that with a Ship taking 1200 Tons of Iron in its Construction, there will be a saving on this Basis, of 400 Tons of Metal. This saving has been Enhansed in the piece of first cost of the Steel. Moreover, the Greater Endurance of that Metal and the Enormous Gain in Carrying Capacity will serve as a Stimulus.

I have not, thus far, been able to obtain the price-lists of Shipbuilding Iron and Steel to allow a Comparision with former years, but there is our point to be considered, namely that the Enormous demand for R. R. Iron between 1865 and 1875 had Given an Impetus to the Trade which to a revulvion of the former Conditions of the Steel Trade within Ten or 15 years the number of finished Iron Works rose from 200 to 300. The rolling Mills throughout the United Kingdom were augmented from 430 to 900—The decay of the Rail Trade has subsequently caused great Losses & an immense amount of Misery.

About the Year 1850, the Trade in Plates was extremely insignificant. The whole production was scarcely 30000 Tons. In the decade 1860-1870 the Increase of Iron used in British Shipbuilding was estimated by an Emminent Shipbuilder at from 270,000 in the first year, to 1,700,000 Tons in the latter, and it stated that since then more than 3,000,000 have been used for Shipbuilding purposes—The point to which attention must be drawn is that the fate which has overtaken the Trade in Iron Rails must ultimately lead to a Total Extinction. Moreover, Countries on the Continent of Europe have enormously Extended the Production during recent years. Hence there has been as the Production of Rail Road Iron *de*creased, a corresponding *In*crease in the making of Plate Iron and Steel. Still the Conversion from Rail to Plate making has only been gradual as it involves heavy Losses in change of Plant. etc. While there is ample evidence that the Life of Steel Rail is three times that of Iron, there has not yet been Sufficient Time elapsed to prove the durability of Steel will excel Iron in Corrosion etc., etc. The largest plate-making Concern in England is the Consett Iron Works—they Employ more than 5000 hands—producing from 1200 to 1500 Tons weekly.

From Henry Hall's Letters, Peabody Museum of Salem

Schooner Annie Larsen

[From Henry Hall note-book in Penobscot Marine Museum, Searsport, Maine, pp. 234-235, 492-493.]

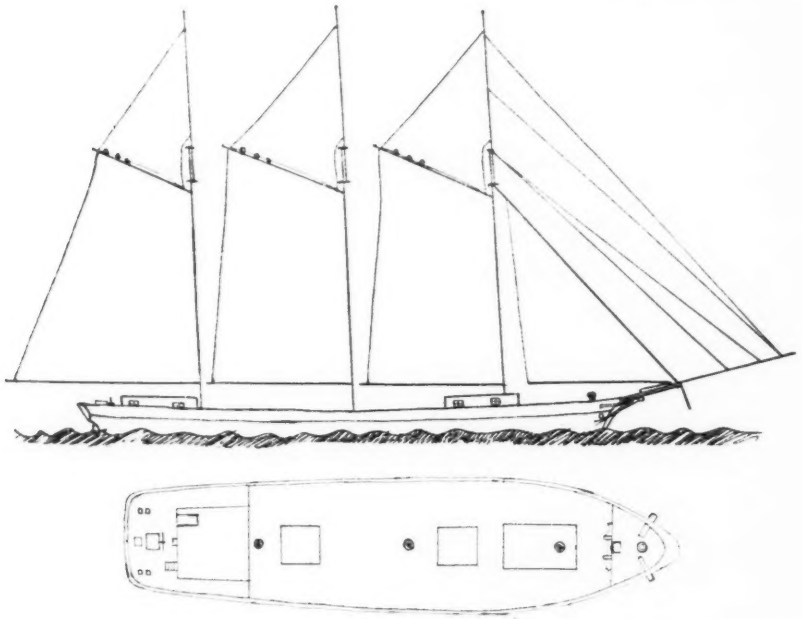
Seabeck, W. T. Nov. 29, '81. Among the vessels lying here is a new 3m. schooner, *Annie Larsen*,[1] just built by the Hall Bros of Port Blakeley, and now taking on her first cargo. She is 133 x 34½ x 11′ hold, tonnage 376. She cost $29,000. When light this schooner draws 7′ 3″ aft, and 5′ 11″ forward.

Mem. Dec. 22, '81. . . . The *Annie Larsen*, Hall's new 3m. schooner, is now here in S. F., unloading lumber, her first trip. She makes 10 miles an hour loaded, with a fair wind. All these lumber schooners are built, expecting to meet a great deal of bad weather. They seldom have a fair wind, going up the coast. They meet the trade winds, and generally have to beat up the coast. The captains some-

[1] The *Annie Larsen* was owned for many years by James Tuft, and later by Olson & Mahoney, both of San Francisco. She was wrecked on Malden Island, in the South Pacific, 9 June 1918.

times carry a little ballast when their vessels are light, but this is not for stability. It is so that the schooners will trim right and go about easily. If the drag is very great, they do not go about easily. The *Annie Larsen* is 133′ keel, about 152 extreme length over all, 34½′ beam, 11′ hold. She cost $29,000, and registers 376.54 tons. When light, she draws 7′3″ aft and 6′ forward.

Lengths on deck going aft. Chock 4′ in the throat. Chock 9″ high, with a 4″ rail on top of it, this rail running clear around the vessel: amidships this rail is on a chock on top of mail rail. From chock to after edge of forecastle deck, 15′; step of bowsprit 36″ high above forecastle deck, and 19″ x 19″. Main rail runs across after end of this deck, which is 22½′ wide here. 3½′ from main deck



to under side of forecastle deck. 9′ from 14′ from house to chock and stern rails. Masts 86′. Topmasts 48′. Bowsprit 28′, 16′ of it outboard. Jibboom 50′, 34′ of it outboard. Boom to jib 38′. Mizen boom 20′ outboard = 54′ long: gaff 30′ Masts from fore edge chock at bow apparently 32′, 75′, 116′. Rake to all 7°. 4 shrouds to each mast, hemp, 2′ 3″ apart, with one f. deck to forehouse. House 20′ x 12′, x 7′ high, rectangular. Center of foremast, 4′ from fore end of house. Deck 28′9″ wide at fore end of house, and about 35 at after end. 27′ from house to center of main mast; 41′ to center mizen. Main house, 20′ wide x 20′ x 7′. It stands one foot aft of mizen mast. Poop deck even with house. Deck about 32′ wide there. backstay a foot aft of shrouds. Dead eyes 42″ above rail. Booms hung high so as to allow for 12′ deck loads. Very light tops to the masts. Cutwater, and three head rails. Elliptical stern. Stern and bow ports. Carries about 2400 yards of canvas. Light and neat framing of masts in tops.

Contributed by John Lyman

Notes

The Beginning of Hudson River Steamboating*

There seems to be some confusion as to the name of the vessel which inaugurated steamboat service on the Hudson River, and the year in which the service commenced. The vessel in question made an experimental trip from New York to Albany and return, 17-21 August 1807, and at least on the downward course carried a few paying passengers. Then she was made ready to enter into the passenger trade.

On 3 September 1807, Robert Fulton enrolled her at New York and the name as entered on the enrollment was *North River Steam Boat*, with no hailing port given. The following day she commenced advertised service between New York and Albany.

Twelve passengers who went through to Albany on the 4 September trip signed a paper which appeared in the Albany *Register*, 8 September 1801.[1] This stated that *North River Steam Boat* had departed from New York at 6:42 A.M., Friday, 4 September; arrived in Albany at 11:27 A.M., Saturday, 5 September; and concluded, 'The subscribers, passengers on board of this boat, on her first passage as a packet, think it but justice to state, that the accommodations and conveniences on board exceeded their most sanguine expectations.' Monday morning, 7 September, she left Albany for New York with about forty passengers.[2]

Fulton had earlier thought that service in 1807 would perhaps continue for from six weeks to two months.[3] As might be expected, *North River Steam Boat* was not free from accidents, but she ran well beyond two months, for business apparently was brisk. The New York *Evening Post* of 2 October 1807 is quoted as saying, 'Mr. Fulton's new invented Steam Boat . . . left here this morning with Ninety passengers. . . . Yesterday she came in from Albany in 28 hours with 60 passengers.'[4] The New York *American Citizen*, 27 October, mentions that she had left New York 'Wednesday last' with upwards of fifty passengers aboard. *Albany Chronicles: A History of the City Arranged Chronologically*[5] states that there were as many as a hundred passengers on a sailing from Albany.

From Washington under date of 20 November 1807, Fulton wrote to Robert R. Livingston, 'I have received your letter of the 12th inst. after all accidents and delays our boat has cleared 5 per cent on the capital expended. . . .'[6] That computation was not based on final figures for the year, since Livingston's communication was penned prior to the close of service.

It had become apparent that *North River Steam Boat* would have to be rebuilt to remedy flaws in her design and to improve her otherwise. The work was

* Because of the confusion in dealing with a steamboat which had *Steam Boat* as part of its name we are departing from our usual editorial policy. In quotations in this note, only those words italicized in the sources have been set in italics.

[1] Quoted in an account by one of the passengers in J. Munsell, *The Annals of Albany*, Vol. VI (Albany, 1855), p. 25.

[2] According to an item in a supplement to the Albany *Gazette*, 7 September 1807, as given by Munsell, op. cit., p. 30.

[3] See a letter from Robert Fulton to Robert R. Livingston as quoted by Fulton's great-granddaughter, Alice Crary Sutcliffe, in her *Robert Fulton and the 'Clermont'* (New York, 1909), pp. 236-238.

[4] Mrs. Sutcliffe, op. cit., pp. 245-246.

[5] Cuyler Reynolds, compiler (Albany, 1906), p. 404.

[6] Mrs. Sutcliffe, op. cit., p. 259.

done between the operating seasons of 1807 and 1808 and, because the vessel had been enlarged, she was again enrolled in May of 1808. As mentioned, the first enrollment gave no hailing port for *North River Steam Boat,* but on the second enrollment one was included. This was Clermont, which was the country home of Robert R. Livingston on the east shore of the Hudson River. It must be emphasized that Clermont, as the hailing port, was not part of the name.

The name itself, *North River Steam Boat,* was purely practical, for it described both the vessel and her route. She was a steamboat and she ran on the North River—then an optional appellation for the Hudson River. The first advertisements for the vessel in 1807 began, 'The North River Steam Boat . . . ,' while later advertisements were headed simply, 'The Steam Boat.' In after years, with more than one steamboat plying on the route, notices were usually identified as being for the 'Steam Boats' and included a listing of the vessels. For such advertisements, the *Steam Boat* portion of *North River Steam Boat*'s name was considered superfluous and she was carried as *North River.*

Her retirement in 1814 was announced in appropriate newspapers. This quotation is from the Albany *Argus* for 8 July of that year.

> Steam-Boat notice.
>
> The public are informed, that the old North-River Steam-Boat is laid aside, and the staunch new boat called the *Richmond,* with handsome accommodations, substituted in her stead. This Boat in consequence will take the place of the North River, leaving New-York on Thursday and Albany on Tuesday, as heretofore advertised.
>
> BARTHOLOMEW, Master.
>
> July 8.

Since the vessel was first enrolled as *North River Steam Boat* and since her name was never changed, the question arises why she came to be referred to as 'Clermont,' from her hailing port. Probably it was because of the utilitarian nature of her proper name. When she was the only steamboat on the river, she might be called 'the *Steam Boat*' with complete understanding. But after there were more than one, this was no longer possible. The other part of her name, *North River,* while entirely satisfactory to the owners for use in advertising, could obviously lead to confusion in popular speech. We might speculate that to stand on a bank of the North River and say, 'Here comes the *North River*!' left something to be desired.

In any event, Charles Seymour Bullock, in 'Anniversary of American Commerce,'[7] wrote, 'On May 13, 1810, the *Hudson Bee,* which, more than any of the other papers of the time, seems to have followed the movements of the steamboat, says: "The North River Steamboat (which is believed to have been the first one built on the river and has lately been known by the name of 'Clermont,' that is in the books). . . ." '

James Thomas Flexner, in *Steamboats Come True: American Inventors in Action,*[8] gives the quotation from the *Bee* as, '*The North River Steamboat* is believed to be the first one built on the river and has lately been known by the name *Clermont,* that is in books.' He perhaps implies that 'books' meant elementary school textbooks.

Through the years thereafter, 'Clermont' gained almost universal acceptance as having been the name of the vessel. Some writers on the subject stated that she was originally named *Clermont* in 1807 and then renamed *North River* in 1808 after the rebuilding.

Another 'name' sometimes applied to the vessel, 'Katharine,' is usually coupled with the assertion that she did not enter into regular service until 1808. These twin errors seem to have blossomed in 1880 in the Cincinnati *Gazette* or *Commercial Gazette.* George Henry Preble, in *A Chronological History of the Origin and Development of Steam Navigation,*[9] quotes a correspondent of that paper as writing,

[7] *The Journal of American History,* Vol. I, No. 3 (New Haven, 1907), pp. 418 and 421.

[8] (New York, 1944), p. 319.

[9] (Philadelphia, 1883), p. 48.

'Fulton's first successful boat was called —not the "Clermont," but the "*Katharine* of Clermont," after Fulton's wife, Katharine Livingston, of Clermont Manor. I read the name so painted, having been a passenger on the first regular trip made by her down the Hudson. As there are few survivors of that notable event, which occured [*sic*] in *April*, 1808, an account of it may gratify your readers. . . . She had made her *trial trip the previous* Fall, being then a mere skeleton. . . .'

As we have seen, the trial trip was made in August 1807 and *North River Steam Boat* was in commercial service from early September onward. And the statement that she was named *Katharine* after Fulton's wife would certainly have amused Fulton, for he married Harriet Livingston, daughter of Walter Livingston, whose country home was called Teviotdale.[10]

Thomas W. Knox, in *The Life of Robert Fulton and a History of Steam Navigation*,[11] presents information which enables one to identify the previous quotation from Preble's work as the reminiscences of Dr. William Perry, who had been born on 20 December 1788. Dr. Perry also dictated an account for Knox. But Knox, considering that Perry was an aged man nearing the century mark, charitably surmised that '. . . his memory may be . . . at fault respecting the appellation of the steamboat, though there cannot be the least doubt of his entire sincerity.'

DONALD C. RINGWALD

YONDER IS THE SEA

GERSHOM Bradford's *Yonder is the Sea* is pure unadulterated nostalgia and a true joy for a seaman to read. Any man, in fact, who has a drop of salt water in his heritage will enjoy his yarns. The author patiently taught me enough navigation to sit for a third mate's license thirty-eight years ago in Boston. I have never regretted a moment of the seafaring and naval careers I've subsequently followed off and on like my fine old Master Mariner teacher.

His writing is contagious! It awakened almost forgotten memories of some of my own 'good old days' at sea. I also want to yarn about many of the strange ships and fine seamen with whom I have been shipmates since I first enlisted in 1917.

> . . . How far far off those happy days appear
> All that I have to live I'd gladly change
> For one such night as I had wasted there . . .
> And drink all life's quintessence in an hour
> In the brave days when I was twenty-one!

After Bradford's tutoring, the ink on my ticket dried for almost a year and a half before I finally found a berth as third mate. Recently during a week's inspection trip to Seattle, Everett, Bellingham and Tacoma, those ports on the northwest coast brought back some fond memories. It's almost forty years since I first sailed into Puget Sound as a fresh-caught third mate. I had shipped in *Trader*—last of the old coal-burning tramps.

This time the weather was beautiful and sunshiny without one day of rain. But in retrospect Seattle and its harbor will never again look as fine as it did years ago by 'moonshine!' I could picture that Sunday evening when USCGC *Bear* was shoving off from the pier, at which we were also moored, for her long Alaskan patrol of the seal fisheries.

Pretty girls galore were waving tearful goodbyes and I remember the third assistant and myself, before *Bear* was hull down on the horizon, gallantly walking uptown to Coffee Dan's with a couple of them. In Tacoma, I recognized the same old hotel where our chief engineer 'found' a Gideon Bible which he brought back aboard as a fitting souvenir of his commandment-breaking night on the beach!

At Bellingham last Tuesday, I (rather hastily) passed a now-abandoned waterfront cafe which was once a hangout for our engineers and mates. It was there I met the husky Queen of Mukilteo—a

[10] Mrs. Sutcliffe, op. cit., p. 218.

[11] (New York, 1887), pp. 115-119.

buxom lumber lass clad in plaid mackinaw shirt, course blue jeans, spiked river boots and a shining new black eye. The Queen was not exactly '. . . spearing a seal for her evening meal . . .' (as the sonnet goes), but I admired her dexterity in eating four fried eggs with a hunting knife.

Then there was hospitable Everett (namesake of our Massachusetts town) where sympathetic citizens watched *Trader* still taking on additional deck load. Already with a twenty-five-degree starboard list, due to empty bunkers, each sling load of two by four's increased it perceptibly. Now I realize the ghouls were betting on when she'd finally capsize!

We were all brave and free and foolish in those times—with the first assistant rationing out half a bucket of fresh water a day to the coal passers and the mates! Still I wouldn't swap my life at sea in the '20's for anything in the modern nuclear world! Nor would Gershom Bradford!

J. W. MCELROY

Weights of Ironwork

The material on weights of iron used in shipbuilding which Mr. Lapham presented on pp. 16-20 of the January Neptune is of considerable interest, since records of this kind seem to be scarce. However, I believe some clarification might make the data even more useful.

In the first place, I do not follow Mr. Lapham's statement that a total weight of 14,930 pounds seems excessive for the 361-ton *Emily*, in view of Griffith's value of 40 pounds per displacement ton for the metal fastenings in a two-decked ship. A vessel of 361 tons old measurement in 1811 would have displaced at least 700 tons; thus Griffith's rule would call for 28,000 pounds for fastenings alone, without counting deck fittings and rigging.

Secondly, the 1818 brig was unquestionably a rebuilding job, not new construction. All the facts point to this: the short time for the work; the inability to find the vessel in the Medford histories; the numerous entries for repairing old bolts; and the commencing of the work with wedges and crowbars, which are tools used in dismantling rather than in shipbuilding.

JOHN LYMAN

More About Piggin Sticks

Further inquiries have failed to turn up any citation of piggin sticks employed in a nautical sense. Etymological authorities are in agreement that piggin, the diminutive of pig, is an earthen or wooden vessel or pitcher. In Allan Ramsay's *Scots Proverbs*, we read:

> She that gangs to the well wi' ill-will
> Either the pig breaks or the water will spill.

As regards 'stick,' etymological sources state this also means a portion of liquor, such as brandy, put into water, tea or the like. Its origin is attributed to the pronged stick of a special kind of wood used in the West Indies for mixing and flavoring drinks. Swizzle Stick is its modern counterpart which is used in mixing a swizzle, a concoction of rum, bitters, sugar and crushed ice. I suggest that piggin stick is probably an alcoholic drink served or kept in a pig or piggin. I am not certain this answers Mr. Herbert's query as it was quoted without context.

How piggin came to be used to designate a boat bailer is beyond me.

CAPTAIN EDGAR K. THOMPSON, U.S.N.

Book Reviews

WILLIAM BELL CLARK, *George Washington's Navy* (Baton Rouge, Louisiana: Louisiana State University Press, 1960). 5½" by 8¾", cloth, 228 pages, illustrated. $5.00.

When General George Washington, Commander-in-Chief of the Continental Armies, decided in the fall of 1775 to arm several schooners and send them forth to harass the British supply lines the American Navy was born. The schooners mounting a few light cannon and some swivels were destined to achieve considerable success throughout the two years he exercised control over the tiny fleet. But due to the lack of adequate administration, the mercurial nature of its officers and crews, the bungling, the complications and obstacles encountered in outfitting and manning the vessels, the naval force created many a headache for its founder.

In a fascinating account that begins with the schooner *Hannah* sailing forth in September 1775 and races to a conclusion twenty-four months later when Captain John Skimmer in *Lee* escorts into Marblehead the captured brigantine *Dolphin*, William Bell Clark, the country's foremost authority on the naval activities of the Revolution, presents in *George Washington's Navy*, a lively and colorful story of the birth of the American Navy, its development and its achievements. The author, after sifting through the accumulated mass of fact and fable enveloping the origin of the navy explodes many a time-honored tradition, corrects many a faulty recollection and comes forth with a clean-cut and unbiased chronicle of its men, its vessels, and its captures.

Scattered throughout its pages are countless episodes in which the officers and men manning the fleet exhibit their true characters. The reader learns that the crew of *Hannah*, the first vessel commissioned by Washington, staged a mutiny forcing the General to send a detachment of soldiers to Gloucester to quell the disturbance; that Captain James Mugford, who, having seized the British armed transport *Hope*—the most valuable prize ever to be taken by the fleet—died a hero's death; that John Manley was the most successful of Washington's naval captains closely followed by John Skimmer, Daniel Waters and Samuel Tucker.

Mr. Clark also relates in two chapters devoted to the fantastic cruise of Nicholson Broughton and John Selman, the problems and vexations the Commander-in-Chief experienced whenever his obstreperous captains decided to pursue their own rash and harebrained ideas.

But Washington never faltered. Despite the trials and tribulations and the sense of frustration that developed as a result of a mingling of patriotism and greed, hope and despair, success and failure, his fleet proved its worth. As a direct result of the maritime activities of his handful of slow-footed, meagerly equipped vessels, dozens of prizes were captured and their stores supplied the Continental Army with vast quantities of guns, powder and ball, clothing and provisions.

George Washington's Navy is an important contribution to naval history and all readers interested in securing an authentic, well-rounded and graphic story of the early days of the American Navy, the vessels which made up the first fleet, the rough, tough, and frequently unruly men who manned it, and its success on the high seas, will find it a rich and rewarding book. It also proves that George Washington, the founder of the Navy, was indeed a man of remarkable patience, determination and foresight. He had to be to contend with the thorny problems, the annoyances and aggravations the fleet laid at the doorstep of his headquarters!

RUSSELL W. KNIGHT

Marblehead, Massachusetts

SALVADOR GARCIA FRANCO, *Instruments Nauticos En El Museo Naval* (Madrid: Instituto Historico De Marina, 1959). 6¾" x 9½", paper, 276 pages, illustrated. 175 pesetas.

One of the world's best collections of navigating instruments is that held by the Museo Naval in Madrid, Spain. While a listing of various objects has been available for years in the general guide to the collection, this is the first effort to catalogue the instruments scientifically. But the book is far more than a catalogue just as one would expect from the pen of the erudite astronomer of the Spanish Fleet, Don Salvador Garcia Franco. Divided in two parts, the first (165 pages) traces in careful detail the development of each instrument except the charts; the second (111 pages) described more or less fully each individual instrument owned by the museum. A few are unique and many of these are of particular importance; for instance, the cross-staff, the 'Crossbow,' the series of very early French and English chronometers, the Volckhmer case of instruments, and one of the astrolabes. The book is indexed by categories, leaving only one thing to be desired: many more illustrations of the pieces.

M. V. BREWINGTON

Peabody Museum of Salem

R. H. THORNTON, *British Shipping* (New York: Cambridge University Press, 1959). 5" x 8⅛", cloth, viii + 374 pages, 16 plates. $4.00.

This little book supplies all the answers compactly, lovingly and well to anyone interested in the steamship business. Part I gives a brief history of the invention and development of steam. Its slow but complete conquest over the clipper ship is dramatically and movingly told. In Part II, Mr. Thornton, who has a good shipping man's definite opinions, describes all the intricate factors that enter into both the tramp and liner businesses. With the sure competence of one who knows his subject intimately, the author describes the ships, types of cargo, and the paper work connected with it; loading, passengers, officers and crews; a voyage from beginning to end, and the problems connected with ship owning. Because of his ease in handling his subject, and his lucid and humorous style, this book—a very good one indeed—can be read with pleasure by one only mildly interested in the subject.

DONALD MACINTYRE, *The Thunder of the Guns: A Century of Battleships* (New York: W. W. Norton, 1960). 5¾" x 8½", cloth, 352 pages, 15 text illustrations, 13 plates. $3.95.

A fast moving, readable, one might almost say intimate and tender, history of the development of the modern battleship, its rise to supremacy of the seas, and its rapid obsolescence during World War II. The first ironclads doomed the great ships of the line—Britain's traditional wooden walls. The invention of the turret, first used successfully on *Monitor* in her memorable battle with the Confederate ironclad *Merrimac*, shadowed the end of the multi-calibered gun ship. Because of the successful use of the ram by the Austrians in their victory over the Italians at the battle of Lissa in the Adriatic, naval architects expected equally great things from this classical weapon, but in this they were disappointed. The introduction of the quick firing gun and torpedo followed the turret and ram. Step by step Mr. Macintyre traces the ships and naval engagements which influenced the evolution of the battleship. Naval designers benefited from the experiences of the Spanish-American and Russo-Japanese Wars. The dramatic building of the first all big gun ship *Dreadnaught* by the British in 1904 placed them ahead of the Germans in a naval race that reached its climax at Jutland. From that time on the monstrous big gun capital ships ruled supreme until the rise of naval aviation reduced them to the roll of shore bombardment and protectors for the new queens of the fleet—the aircraft carriers.

BOOKS RECEIVED

HAROLD A. UNDERHILL, *Plank-on-Frame Models and Scale Masting and Rigging*, Volume II (Glasgow: Brown, Son and Ferguson, Ltd., 1960). 7" x 9¾", cloth, 148 pages, 27 half-tone figures, 89 line sketches, 4 plates. $5.00.

The second part, with an index, of this useful, detail-packed book for the model builder.

STUART H. WALKER, Editor, *The Techniques of Small Boat Racing* (New York: W. W. Norton, 1960). 6¼" x 8½", cloth, xvi + 288 pages, 8 plates, text figures and decorations.

An excellent technical book for the small boat racing sailor.

ALBERT COOK CHURCH, *Whale Ships and Whaling* (New York: W. W. Norton, 1960). 7½" x 10", cloth, 179 pages, 206 illustrations. $8.50.

A welcome, new, offset edition of a popular work with outstanding pictures, originally published by the same company in 1938.

VIRGIL E. BAUGH, *Records of the Bureau of Naval Personnel* (Washington: The National Archives, 1960). 8" x 10½", paper, 135 pages.

Preliminary Inventory of the National Archives of the United States, Number 123.

National Archives Accessions, No. 55 (Washington, 1960). 7¾" x 10¼", paper, 36 pages.

The accessions show a number of lots of papers of maritime importance.

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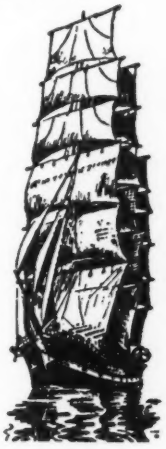

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